
بسم الله الرحمن الرحیم


دانشکده تربیت بدنی و علوم ورزشی

دانشگاه خوارزمی

هفته پژوهش و فناوری

سمپوزیوم

ورزش سالمندی

زمان برگزاری:

چهارشنبه ۲۴ آذر ماه ساعت ۱۷–۱۳

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دانشگاه خوارزمی

هفته پژوهش و فناوری

سمپوزیوم

ورزش سالمندی

دکتر چالاک مجیدی

عضو هیات علمی دانشگاه خوارزمی

جایگاه و منزلت اجتماعی سالمندی در ایران و جهان

دانشگاه خوارزمی

سمپوزیوم ورزش سالمندی

چهارشنبه ۲۴ آذر ماه

دانشکده تربیت بدنی و علوم ورزشی

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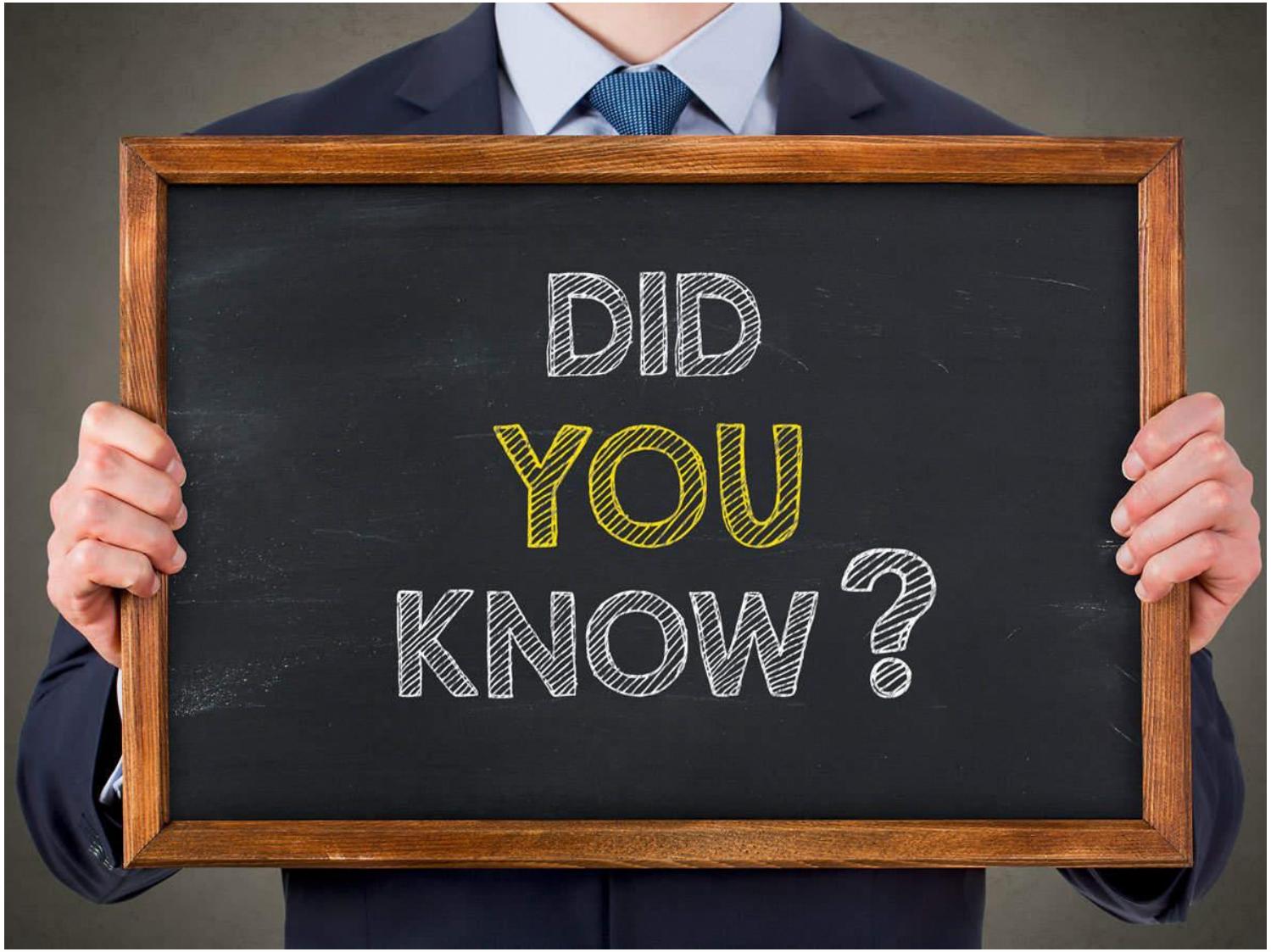

DID
YOU
KNOW ?

دانشگاه خوارزمی

سمپوزیوم ورزش سالمندی

چهارشنبه ۲۴ آذر ماه

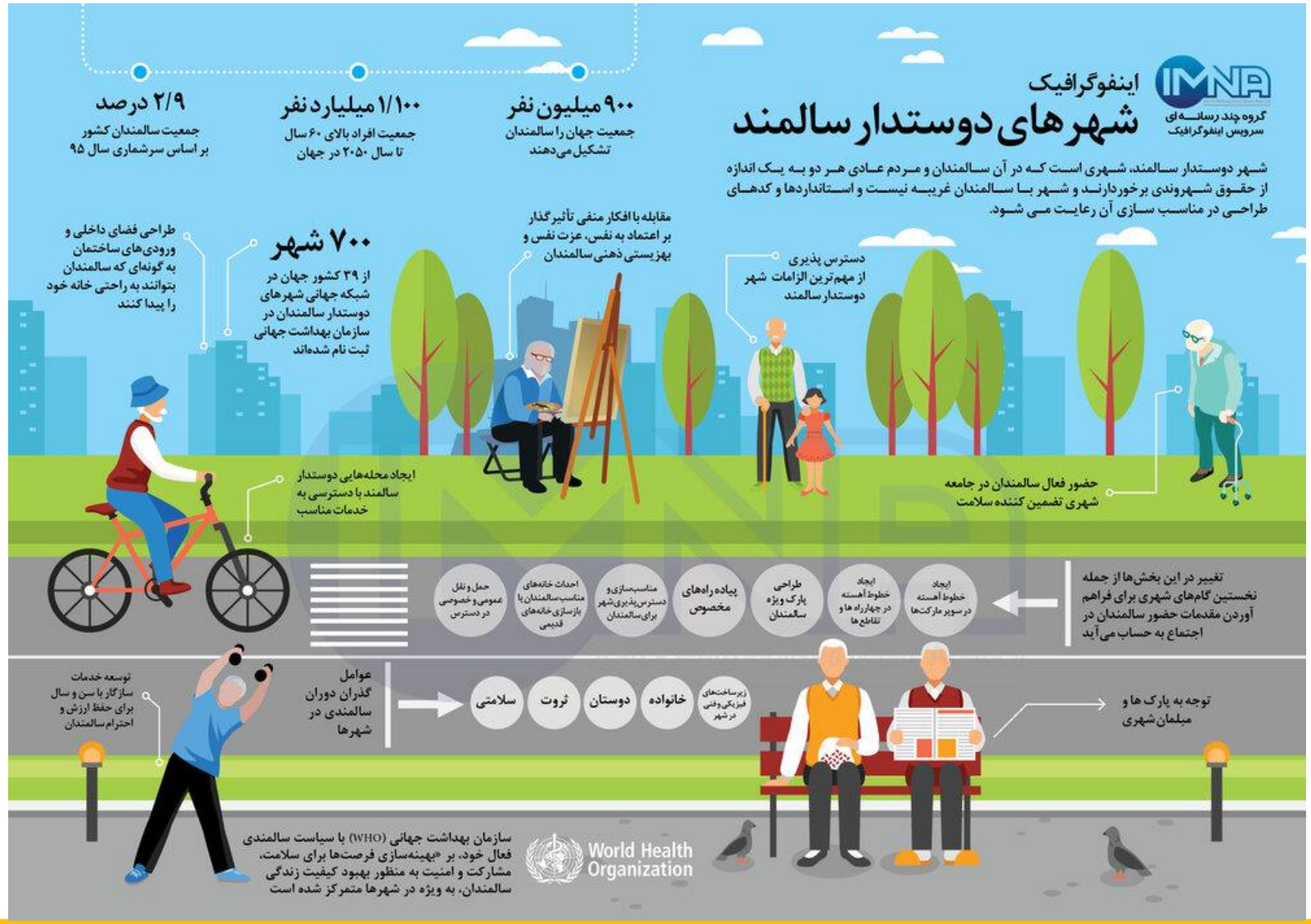
دانشکده تربیت بدنی و علوم ورزشی


Fitness

سمپوزیوم ورزش سالمندی

چهارشنبه ۲۴ آذر ماه


REGULATIONS
RULES


اینفوگرافیک
شهرهای دوستدار سالمند
گروه چند رسانه‌ای سروبس اینفوگرافیک
شهر دوستدار سالمند، شهری است که در آن سالمندان و مردم عادی هر دو به یک اندازه از حقوق شهروندی برخوردارند و شهر با سالمندان غریبه نیست و استانداردها و کدهای طراحی در مناسب سازی آن رعایت می شود.
۹۰۰ میلیون نفر
جمعیت جهان را سالمندان تشکیل می‌دهند
۱/۱۰۰ میلیارد نفر
جمعیت افراد بالای ۶۰ سال تا سال ۲۰۵۰ در جهان
۲/۹ درصد
جمعیت سالمندان کشور بر اساس سرشماری سال ۹۵
۷۰۰ شهر
از ۳۹ کشور جهان در شبکه جهانی شهرهای دوستدار سالمندان در سازمان بهداشت جهانی ثبت نام شده‌اند
طراحی فضای داخلی و ورودی‌های ساختمان به گونه‌ای که سالمندان بتوانند به راحتی خانه خود را پیدا کنند
مقابله با افکار منفی تأثیرگذار بر اعتماد به نفس، عزت نفس و بهزیستی ذهنی سالمندان
دسترس پذیری از مهم‌ترین الزامات شهر دوستدار سالمند
حضور فعال سالمندان در جامعه شهری تضمین کننده سلامت
ایجاد محله‌هایی دوستدار سالمند با دسترسی به خدمات مناسب
تغییر در این بخش‌ها از جمله نخستین گام‌های شهری برای فراهم آوردن مقدمات حضور سالمندان در اجتماع به حساب می‌آید
ایجاد خطوط آهسته در سوپر مارکت‌ها
ایجاد خطوط آهسته در چهارراه ها و تقاطع‌ها
طراحی پارک ویژه سالمندان
پیاده راه‌های مخصوص
مناسب‌سازی و دسترس‌پذیری شهر برای سالمندان
احداث خانه‌های مناسب سالمندان با بازسازی خانه‌های قدیمی
حمل و نقل عمومی و خصوصی در دسترس
توجه به پارک ها و مبلمان شهری
عوامل گذران دوران سالمندی در شهرها
زیرساخت‌های فیزیکی و فنی در شهر
خانواده
دوستان
ثروت
سلامتی
توسعه خدمات سازگار با سن و سال برای حفظ ارزش و احترام سالمندان
سازمان بهداشت جهانی (WHO) با سیاست سالمندی فعال خود، بر «بهینه‌سازی فرصت‌ها برای سلامت، مشارکت و امنیت به منظور بهبود کیفیت زندگی سالمندان، به ویژه در شهرها متمرکز شده است
World Health Organization

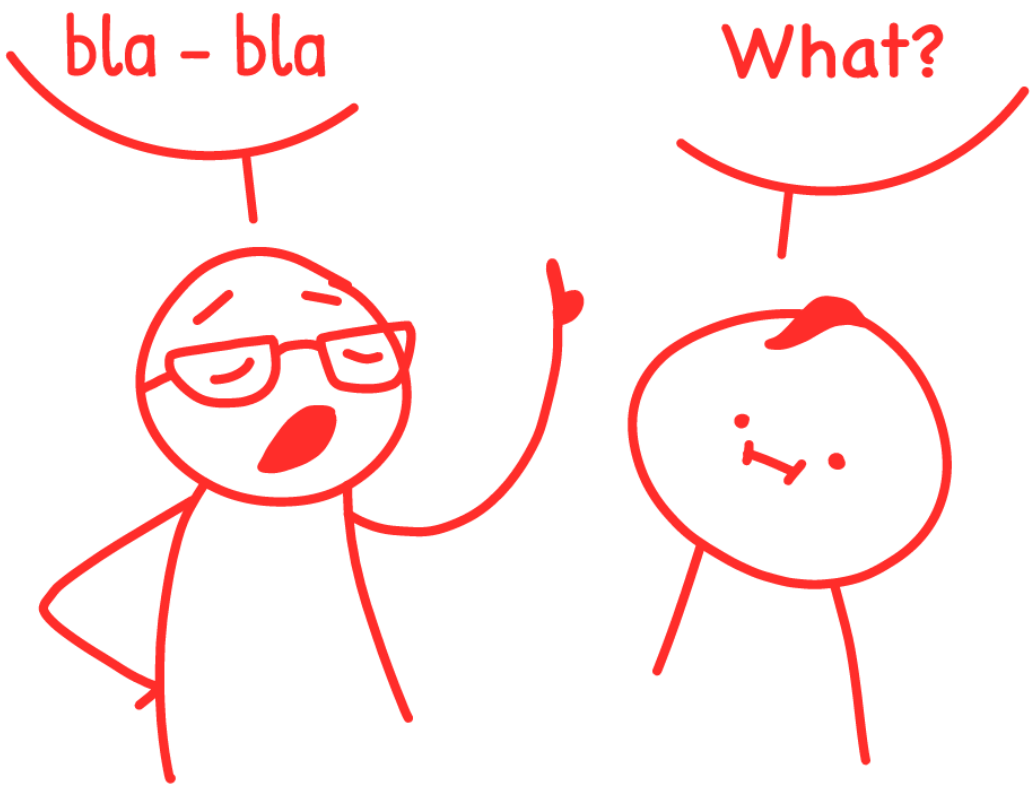
- مناسب سازی معابر
- مناسب سازی فضای پارکها
- سیستم حمل ونقل
- ایمن سازی اماکن ورزشی
- ایجاد فضای مخصوص سالمندان

سلامت نیوز:

رئیس فراکسیون سلامت سالمندان گفت که در سال ۱۴۳۰ حدود ۳۳ درصد جامعه را سالمندان تشکیل می دهند لذا باید در فرصت کم باقی مانده برنامه ریزی های لازم صورت گیرد.

سمپوزیوم ورزش سالمندی

چهارشنبه ۲۴ آذر ماه



Curse of Knowledge

دانشگاه خوارزمی

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https://pess.khu.ac.ir

@ faculty_physicaleducation_khu

@Chalakmajidi
chalakmajidi@gmail.com

سپاس از توجه شما عزیزان


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هفته پژوهش و فناوری

سمپوزیوم

ورزش سالمندی

دکتر شیما قنادی

متخصص پزشکی ورزشی دانشگاه علوم پزشکی تهران

ملاحظات پزشکی در ورزش سالمندان

معرفی:

دکتر شیما قنادی

پزشک و متخصص پزشکی ورزشی
عضو دپارتمان تخصصی پزشکی ورزشی دانشگاه تهران
عضو کالج پزشکی ورزشی آمریکا
رئیس کمیته پزشکی فدراسیون دوچرخه سواری
عضو و مدرس ستاد ملی مبارزه با دوپینگ (نادو)
عضو کمیته پزشکی فدراسیون والیبال
عضو کمیته درمان فدراسیون پزشکی ورزشی
دبیر و مدرس کمیته تندرستی فدراسیون ورزش های همگانی

ملاحظات پزشکی ورزشی در سالمندان

2018 Physical Activity Guidelines for Americans (107):
http://www.health.gov/PAguidelines/
ACSM Exercise Is Medicine:
http://www.exerciseismedicine.org
ACSM position stand on progression models in resistance training (4):
http://www.acsm.org
ACSM position stand on the quantity and quality of exercise (37):
http://www.acsm.org
American Heart Association:
http://www.heart.org
Compendium of Physical Activities:
https://sites.google.com/site/compendiumofphysicalactivities/
National Institutes on Aging Exercise and Physical Activity Guide (108):
http://www.nia.nih.gov/HealthInformation/Publications/
National Strength and Conditioning Association:
http://www.nsca-lift.org
Shape Up America:
http://www.shapeup.org

Older Adult

- ***Aged ≥65 yr***
- ***Aged 50–64 yr*** *with clinically* significant conditions or physical limitations that affect movement, physical fitness, or physical activity and represents a diverse spectrum of ages and physiologic capabilities.

Older Adult

Because physiologic aging does not **occur uniformly** across the population, individuals of similar chronological age may differ dramatically in their **response to exercise**.

Older Adult

In addition, it is difficult to distinguish the effects of aging on physiologic function from the effects of **deconditioning** or **disease.**

➢Therefore, **health** and **functional status** are often better indicators of the ability to engage in physical activity than chronological age.

Effects of Aging on Selected Physiologic and Health-Related Variables (107)

Variable	Change
Resting heart rate	Unchanged
Maximum heart rate	Lower
Maximum cardiac output	Lower
Resting and exercise blood pressure	Higher
Absolute and relative maximum oxygen uptake reserve ($\dot{V}O_2R_{max}$ L · min^{-1} and mL · kg^{-1} · min^{-1})	Lower
Residual volume	Higher
Vital capacity	Lower
Reaction time	Slower
Muscular strength	Lower
Flexibility	Lower
Bone mass	Lower
Fat-free body mass	Lower
% Body fat	Higher
Glucose tolerance	Lower
Recovery time	Longer

The benefits of physical Activity in Older Adult:

(a) **slowing physiologic changes** of aging that impair exercise capacity,

(b) optimizing **age-related changes in body composition**,

(c) promoting **psychological** and **cognitive well-being,**

(d) managing **chronic diseases**,

(e) reducing the **risks of physical disability**,

(f) increasing **longevity**

Exercise Preparticipation Health Screening

Major Signs or Symptoms Suggestive of Cardiovascular, Metabolic, and Renal Disease[a]

Signs or Symptoms	Clarification/Significance
Pain; discomfort (or other anginal equivalent) in the chest, neck, jaw, arms, or other areas that may result from myocardial ischemia	One of the cardinal manifestations of cardiac disease; in particular, coronary artery disease Key features *favoring an ischemic origin* include the following: ■ *Character*: constricting, squeezing, burning, "heaviness," or "heavy feeling" ■ *Location*: substernal, across midthorax, anteriorly; in one or both arms, shoulders; in neck, cheeks, teeth; in forearms, fingers in interscapular region ■ *Provoking factors*: exercise or exertion, excitement, other forms of stress, cold weather, occurrence after meals Key features *against an ischemic origin* include the following: ■ *Character*: dull ache; "knifelike," sharp, stabbing; "jabs" aggravated by respiration ■ *Location*: in left submammary area; in left hemithorax ■ *Provoking factors*: after completion of exercise, provoked by a specific body motion
Shortness of breath at rest or with mild exertion	Dyspnea (defined as an abnormally uncomfortable awareness of breathing) is one of the principal symptoms of cardiac and pulmonary disease. It commonly occurs during strenuous exertion in healthy, well-trained individuals and during moderate exertion in healthy, untrained individuals. However, it should be regarded as abnormal when it occurs at a level of exertion that is not expected to evoke this symptom in a given individual. Abnormal exertional dyspnea suggests the presence of cardiopulmonary disorders; in particular, left ventricular dysfunction or chronic obstructive pulmonary disease.
Dizziness or syncope	Syncope (defined as a loss of consciousness) is most commonly caused by a reduced perfusion of the brain. Dizziness and, in particular, syncope *during* exercise may result from cardiac disorders that prevent the normal rise (or an actual fall) in cardiac output. Such cardiac disorders are potentially life threatening and include severe coronary artery disease, hypertrophic cardiomyopathy, aortic stenosis, and malignant ventricular dysrhythmias. Although dizziness or syncope shortly *after* cessation of exercise should not be ignored, these symptoms may occur even in healthy individuals as a result of a reduction in venous return to the heart.
Orthopnea or paroxysmal nocturnal dyspnea	Orthopnea refers to dyspnea occurring at rest in the recumbent position that is relieved promptly by sitting upright or standing. Paroxysmal nocturnal dyspnea refers to dyspnea, beginning usually 2–5 h after the onset of sleep, which may be relieved by sitting on the side of the bed or getting out of bed. Both are symptoms of left ventricular dysfunction. Although nocturnal dyspnea may occur in individuals with chronic obstructive pulmonary disease, it differs in that it is usually relieved following a bowel movement rather than specifically by sitting up.

Major Signs or Symptoms Suggestive of Cardiovascular, Metabolic, and Renal Disease[a] (Continued)

Signs or Symptoms	Clarification/Significance
Ankle edema	Bilateral ankle edema that is most evident at night is a characteristic sign of heart failure or bilateral chronic venous insufficiency. Unilateral edema of a limb often results from venous thrombosis or lymphatic blockage in the limb. Generalized edema (known as anasarca) occurs in individuals with the nephrotic syndrome, severe heart failure, or hepatic cirrhosis.
Palpitations or tachycardia	Palpitations (defined as an unpleasant awareness of the forceful or rapid beating of the heart) may be induced by various disorders of cardiac rhythm. These include tachycardia, bradycardia of sudden onset, ectopic beats, compensatory pauses, and accentuated stroke volume resulting from valvular regurgitation. Palpitations also often result from anxiety states and high cardiac output (or hyperkinetic) states, such as anemia, fever, thyrotoxicosis, arteriovenous fistula, and the so-called idiopathic hyperkinetic heart syndrome.
Intermittent claudication	Intermittent claudication refers to the pain that occurs in the lower extremities with an inadequate blood supply (usually as a result of atherosclerosis) that is brought on by exercise. The pain does not occur with standing or sitting, is reproducible from day to day, is more severe when walking upstairs or up a hill, and is often described as a cramp, which disappears within 1–2 min after stopping exercise. Coronary artery disease is more prevalent in individuals with intermittent claudication. Patients with diabetes are at increased risk for this condition.
Known heart murmur	Although some may be innocent, heart murmurs may indicate valvular or other cardiovascular disease. From an exercise safety standpoint, it is especially important to exclude hypertrophic cardiomyopathy and aortic stenosis as underlying causes because these are among the more common causes of exertion-related sudden cardiac death.
Unusual fatigue or shortness of breath with usual activities	Although there may be benign origins for these symptoms, they also may signal the onset of or change in the status of cardiovascular disease or metabolic disease.

Assess your client's health needs by marking all *true* statements.

Step 1

SYMPTOMS

Does your client experience:

____ chest discomfort with exertion
____ unreasonable breathlessness
____ dizziness, fainting, blackouts
____ ankle swelling
____ unpleasant awareness of a forceful, rapid or irregular heart rate
____ burning or cramping sensations in your lower legs when walking short distance

If you **did** mark any of these statements under the symptoms, **STOP**, your client should should seek medical clearance before engaging in or resuming exercise. Your client may need to use a facility with a **medically qualified staff**.

If you **did not** mark any symptoms, continue to steps 2 and 3.

Step 2

CURRENT ACTIVITY

Has your client performed planned, structured physical activity for at least 30 min at moderate intensity on at least 3 days per week for at least the last 3 months?

Yes ☐ No ☐

Continue to Step 3.

Step 3

MEDICAL CONDITIONS

Has your client had or do they currently have:

____ a heart attack
____ heart surgery, cardiac catheterization, or coronary angioplasty
____ pacemaker/implantable cardiac defibrillator/rhythm disturbance
____ heart valve disease
____ heart failure
____ heart transplantation
____ congenital heart disease
____ diabetes
____ renal disease

Evaluating Steps 2 and 3:

عدم شرکت در ورزش منظم

هر گونه علامت یا نشانه پیشنهاد دهنده بیماری قلبی عروقی(CV)، متابولیک، یا کلیوی (بدون توجه به وضعیت بیماری)	وجود بیماری شناخته شده قلبی عروقی(CV)، متابولیک، یا کلیوی و بدون علامت	عدم وجود بیماری شناخته شده قلبی عروقی(CV)، متابولیک، یا کلیوی و نبود علامت یا نشانه پیشنهاد دهنده آنها
اجازه نامه پزشکی توصیه می شود	اجازه نامه پزشکی توصیه می شود	اجازه نامه پزشکی لازم نیست
به دنبال دریافت اجازه نامه پزشکی، ورزش با شدت کم تا متوسط توصیه می شود؛ ممکن است پیشرفت تدریجی در حد تحمل و بر پایه خطوط راهنمای ACSM داده شود	به دنبال دریافت اجازه نامه پزشکی، ورزش با شدت کم تا متوسط توصیه می شود؛ ممکن است پیشرفت تدریجی در حد تحمل و بر پایه خطوط راهنمای ACSM داده شود	ورزش با شدت کم تا متوسط توصیه می شود؛ ممکن است پیشرفت تدریجی به سمت ورزش با شدت بالا و بر پایه خطوط راهنمای ACSM داده شود

شرکت در ورزش منظم

عدم وجود بیماری شناخته شده قلبی عروقی(CV)، متابولیک، یا کلیوی و نبود علامت یا نشانه پیشنهاد دهنده آنها	وجود بیماری شناخته شده قلبی عروقی(CV)، متابولیک، یا کلیوی و بدون علامت	هر گونه علامت یا نشانه پیشنهاد دهنده بیماری قلبی عروقی(CV)، متابولیک، یا کلیوی (بدون توجه به وضعیت بیماری)
اجازه نامه پزشکی لازم نیست	اجازه نامه پزشکی برای ورزش با شدت متوسط ضروری نیست؛ اجازه نامه پزشکی(طی ۱۲ ماه گذشته، اگر تغییری در علائم/نشانه ها نباشد) قبل از ورزش با شدت بالا توصیه می شود	قطع ورزش و طلب اجازه نامه پزشکی
ادامه ورزش با شدت متوسط تا بالا؛ ممکن است پیشرفت بر پایه خطوط راهنمای ACSM داده شود	ادامه ورزش با شدت متوسط؛ بدنبال اجازه نامه پزشکی، شاید پیشرفت در تحمل و بر پایه خطوط راهنمای ACSM داده شود	ممکن است به دنبال اجازه نامه پزشکی به ورزش بازگردد؛ پیشرفت تدریجی در حد تحمل و بر پایه خطوط راهنمای ACSM داده شود

Exercise Testing

Most older adults **do not require** an exercise test prior to initiating **a light to moderate intensity** physical activity program.

*However, if exercise testing is recommended, it should be noted that the **associated** **ECG**.* (LVH and other CVD risk factors)

Special considerations in testing:

The modified Naughton **treadmill protocol** is a good example of such a protocol.

Special considerations in testing:

cycle ergometer:

poor balance, poor neuromotor coordination, impaired vision, impaired gait patterns, weight-bearing limitations, and/or orthopedic problems

- **local muscle fatigue**

Special considerations in testing:

Treadmill workload may need to be adapted according to walking ability by **increasing grade rather than speed**.

Special considerations in testing:

Currently, there is a paucity of evidence demonstrating **increased mortality or cardiovascular event risk during exercise or exercise testing** in this segment of the population, therefore eliminating the need for exercise testing unless medically indicated (*e.g., symptomatic CVD, uncontrolled diabetes).*

Exercise Prescription

Low aerobic capacity, muscle weakness, and **deconditioning** are more common in older adults than in any other age group and contribute to loss of independence, and therefore, an appropriate Ex Rx should include **aerobic, muscle strengthening/endurance,** and **flexibility exercises**.

Exercise Prescription

Individuals who are **frequent fallers** or **have mobility limitations** may also benefit from specific **neuromotor exercises** to improve balance, agility, and proprioceptive training (*e.g., tai chi), in addition to the other components of health-related* physical fitness.

Exercise Prescription

For Ex Rx, an important distinction between older adults and their younger counterparts should be made relative to **intensity**.

Exercise Prescription

For older adults, activities should be defined relative to an individual's physical fitness within the context of a **perceived 10-point physical exertion scale** which ranges from 0 (an effort equivalent to sitting) to 10 (an all-out effort), with moderate intensity defined as 5 or 6 and vigorous intensity as ≥7.

RPE Scale

(Rate of Perceived Exertion)

1	**Very Light Activity** (anything other than complete rest)
2-3	**Light activity** (feels like you can maintain for hours, easy to breath and carry on a conversation)
4-5	**Moderate Activity** (feel like you can exercise for long periods of time, able to talk and hold short conversations)
6-7	**Vigorous Activity** (on the verge of becoming uncomfortable, short of breath, can speak a sentence)
8-9	**Very Hard Activity** (difficult to maintain exercise intensity, hard to speak more than a single word)
10	**Max Effort** (feels impossible to continue, completely out of breath, unable to talk)

Special Considerations for Exercise Programming:

Intensity and duration of physical activity should be **light** at the beginning, in particular for older adults who are highly deconditioned, functionally limited, or have chronic conditions that affect their ability to perform physical tasks.

Special Considerations for Exercise Programming:

Progression of physical activity should be **individualized** and **tailored to tolerance and preference**; a **conservative approach** may be necessary for the older adults who are highly deconditioned or physically limited.

Special Considerations for Exercise Programming:

Muscular strength decreases rapidly with age, especially for those aged >50 yr.

Although **resistance training** is important across the lifespan, it becomes **more important** with increasing age.

Special Considerations for Exercise Programming:

For strength training involving use of selectorized machines or free weights, initial training sessions should be **supervised** and monitored by personnel who are sensitive to the special needs of older adults.

Special Considerations for Exercise Programming:

Older adults may particularly benefit from **power training** because this element of muscle fitness declines most rapidly with aging, and insufficient power has been associated with a greater **risk of accidental falls**.

Special Considerations for Exercise Programming:

Increasing muscle power in healthy older adults should include both **single and multiple-joint exercises** (one to three sets) using **light-to-moderate loading** (30%–60% of 1-RM) for 6–10 repetitions with **high velocity**.

Special Considerations for Exercise Programming:

Individuals with **sarcopenia**, a marker of frailty, need to **increase muscular strength** before they are physiologically capable of engaging in aerobic training.

Special Considerations for Exercise Programming:

If chronic conditions preclude activity at the recommended minimum amount, older adults should perform physical activity **as tolerated** to avoid being sedentary.

Special Considerations for Exercise Programming:

Moderate intensity physical activity should be encouraged for individuals with **cognitive decline** given the known benefits of physical activity on cognition.

Individuals with significant cognitive impairment can engage in physical activity but may require **individualized assistance**.

Special Considerations for Exercise Programming:

Structured physical activity sessions should end with an appropriate **cool-down**, particularly among individuals with **CVD**.

The cool-down should include a gradual reduction of effort and intensity and, optimally, flexibility exercises.

Special Considerations for Exercise Programming:

Incorporation of **behavioral strategies** such as **social support**, **self-efficacy, the ability to make healthy choices,** and **perceived safety** all may enhance participation in a regular exercise program.

Special Considerations for Exercise Programming:

The exercise professional should also provide **regular feedback, positive reinforcement,** and **other behavioral/programmatic strategies** to enhance adherence.


سپاس از حسن توجه شما

دانشگاه خوارزمی

هفته پژوهش و فناوری

سمپوزیوم

ورزش سالمندی

دکتر ابوالفضل گودرزی

عضو هیات علمی دانشگاه پیام نور

رویکرد هوشمندانه در سالمندی موفقیت آمیز

مقدمه و معرفی پژوهش

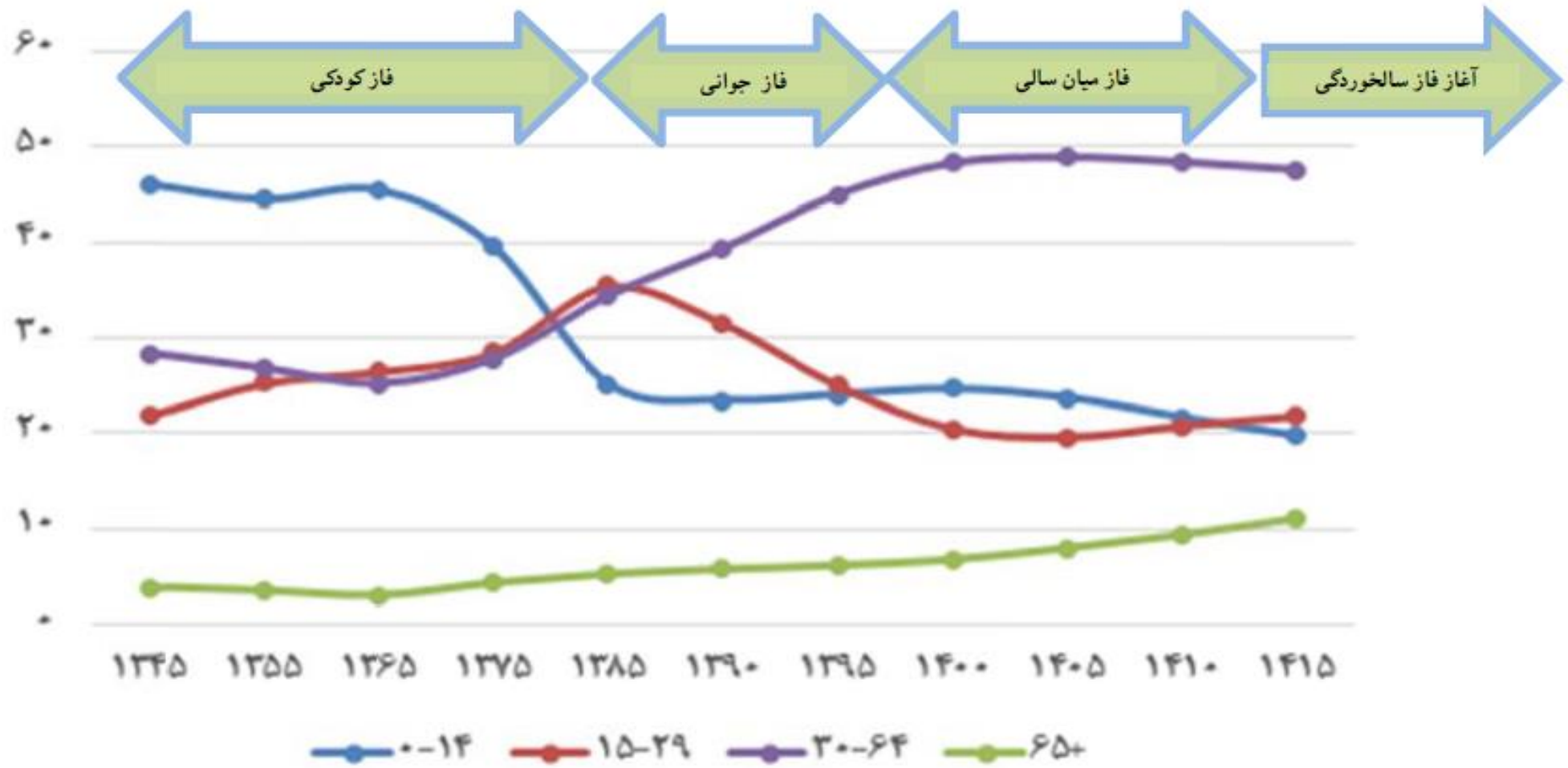
پیرترین کشور دنیا در آینده ای بسیار نزدیک

شاخص جهانی دیده‌بان سن (GAWI): بیش از ۱۰ درصد جمعیت ایران سالمند، پیش بینی شده در سال ۲۰۵۰ این رقم به بیش از ۳۶/۶ درصد برسد

WHO: کشور سالمند، جمعیت بالای ۶۵ سال در کشوری بالای هفت درصد

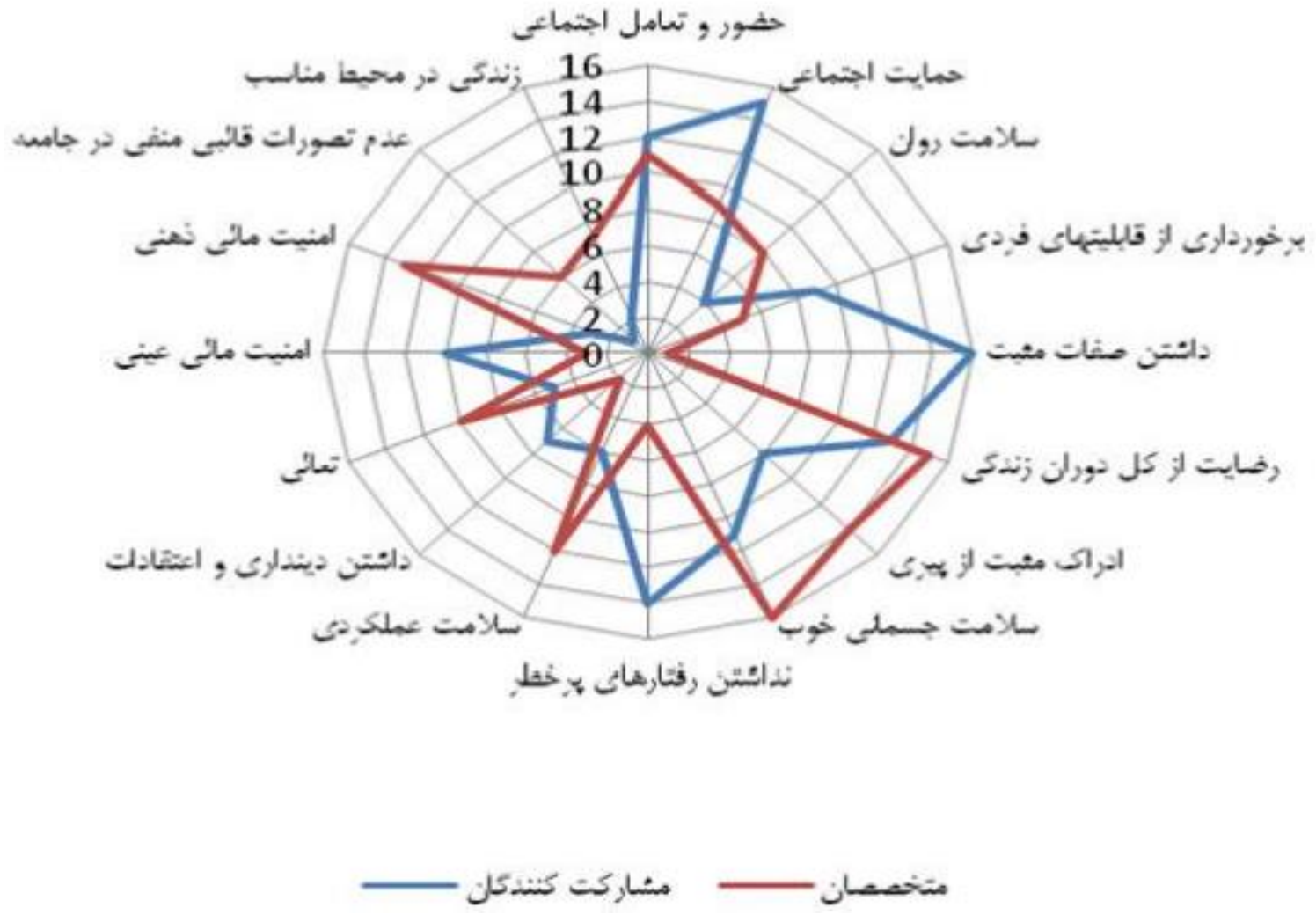
تغییرات هرم سنی و جمعیت کشور

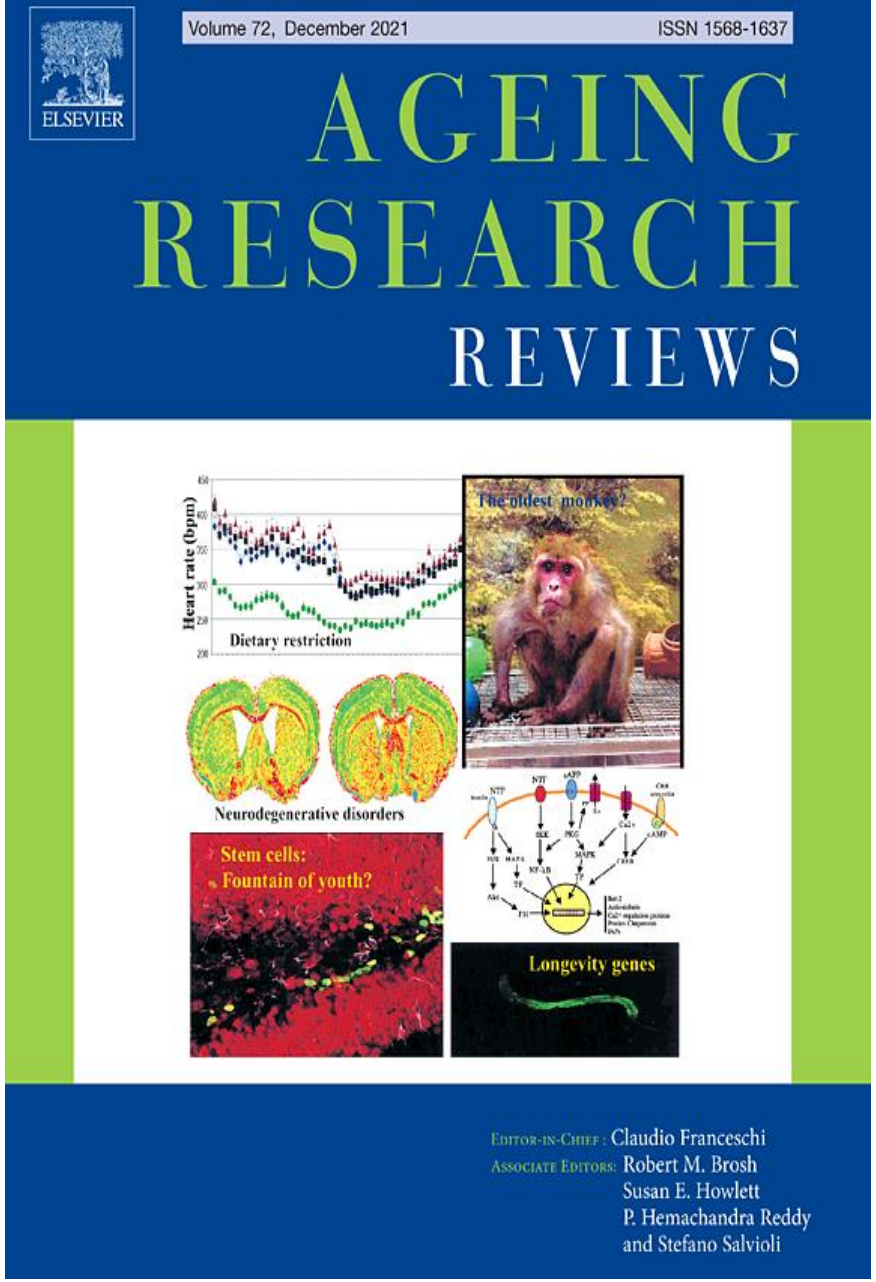
نمودار گذار سنی هرم جمعیت کشور در دوره‌های زمانی مختلف



سالمندی موفقیت آمیز

- سالمندی موفق احساس رضایت و شادی درونی فرد از زندگی کنونی و گذشته خود است.





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PMCID: PMC4661112
Published in final edited form as:
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Ageing Res Rev. 2015 Nov; 24(0 0): 304–327.
PMID: 26462882
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Successful Aging: Advancing the Science of Physical Independence in Older Adults

Stephen D. Anton, Ph.D,[a,*] Adam J. Woods,[a,b] Tetso Ashizawa,[c] Diana Barb,[a,d] Thomas W. Buford,[a] Christy S. Carter,[a] David J. Clark,[a] Ronald A. Cohen,[b] Duane B. Corbett,[a] Yenisel Cruz-Almeida,[a,b] Vonetta Dotson,[b] Natalie Ebner,[e] Philip A. Efron,[f] Roger B. Fillingim,[g] Thomas C. Foster,[b,h] David M. Gundermann,[a] Anna-Maria Joseph,[a] Christy Karabetian,[a,i] Christiaan Leeuwenburgh,[a] Todd M. Manini,[a] Michael Marsiske,[i] Robert T. Mankowski,[a] Heather L. Mutchie,[a] Michael G. Perri,[i] Sanjay Ranka,[j] Parisa Rashidi,[k] Bhanuprasad Sandesara,[a] Philip J. Scarpace,[L] Kimberly T. Sibille,[a] Laurence M. Solberg,[a] Shinichi Someya,[a] Connie Uphold,[a] Stephanie Wohlgemuth,[m] Samuel Shangwu Wu,[n] and Marco Pahor[a]

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17.4 CiteScore
10.895 Impact Factor

- حوزه عملکرد فیزیکی بشترین اجماع را در مورد نشانگرهای پیری موفقیت آمیز دارد.
- حفظ استقلال جسمی، سنگ بنای پیری موفق را پیش بینی می کند.

نشانگرهای جایگزین توانایی عملکردی و وضعیت سلامتی در افراد مسن

- سرعت پیاده روی (یعنی مسافت تکمیل شده تقسیم بر زمان)
- عملکرد در یک معیار استاندارد شده عملکرد فیزیکی (SPPB)

سالمندي موفقيت آميز

توسعه فعالیت جسمانی

تدوین نقشه راه برای توسعه و ترویج فعالیت‌های جسمانی در سالمندان

فواید اقتصادی توسعه فعالیت جسمانی

- هزینه‌های مستقیم و غیرمستقیم عدم فعالیت‌جسمانی کافی در انگلیس در کل ۲۰ میلیارد پوند است و کاهش یک درصدی عدم فعالیت جسمانی در سالمندان می‌تواند ۲/۱ میلیارد پوند در طی پنج سال صرفه‌جویی اقتصادی داشته باشد.

- افزایش ۱۰ درصدی افزایش فقط پیاده‌روی منظم آمریکایی‌ها، حداقل ۶/۵ میلیارد دلار در هزینه‌های بیماری‌های قلبی و عروقی صرفه‌جویی اقتصادی خواهد داشت.

- طور متوسط ۵/۶ دلار به ازای هر دلار هزینه در طی پنج سال، در آمریکا اثربخش خواهد بود.

- در گزارش سال ۲۰۱۸ وزارت بهداشت آمریکا آمده است، عدم فعالیت بدنی بزرگسالان، با تقریباً ۱۱۷ میلیارد دلار هزینه سالانه مراقبت‌های بهداشتی و حدود ۱۰ درصد مرگ و میر زودرس مرتبط است.

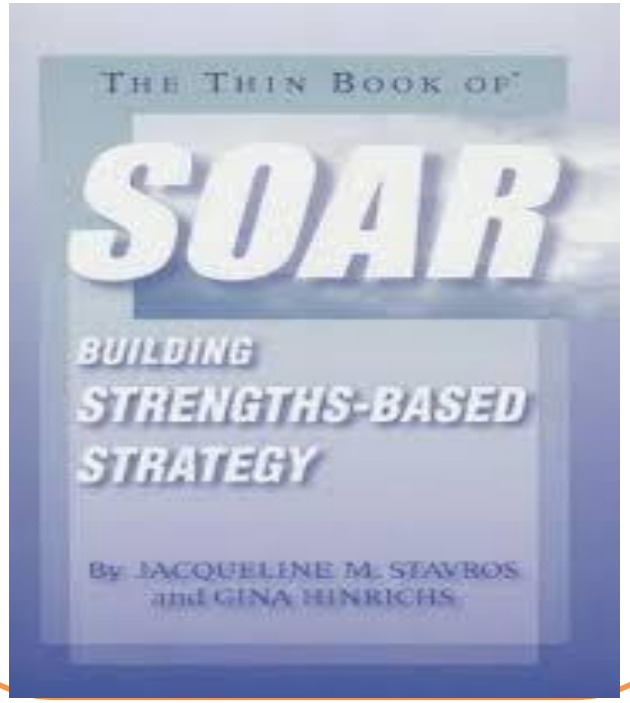
چگونه به نقشه راه دست یابیم؟

- مطالعه اسناد بالادستی
- مطالعه تجربیات کشورهای پیشرو
- مطالعه و تحلیل محیط درونی و بیرونی توسعه فعالیت جسمانی سالمندان
- فرایند تدوین راهبردها و برنامه های عملیاتی آنها
- فرایند اجرایی شدن راهبردها

شبکه مضامین تحلیل برنامه‌های کشورهای پیشرو

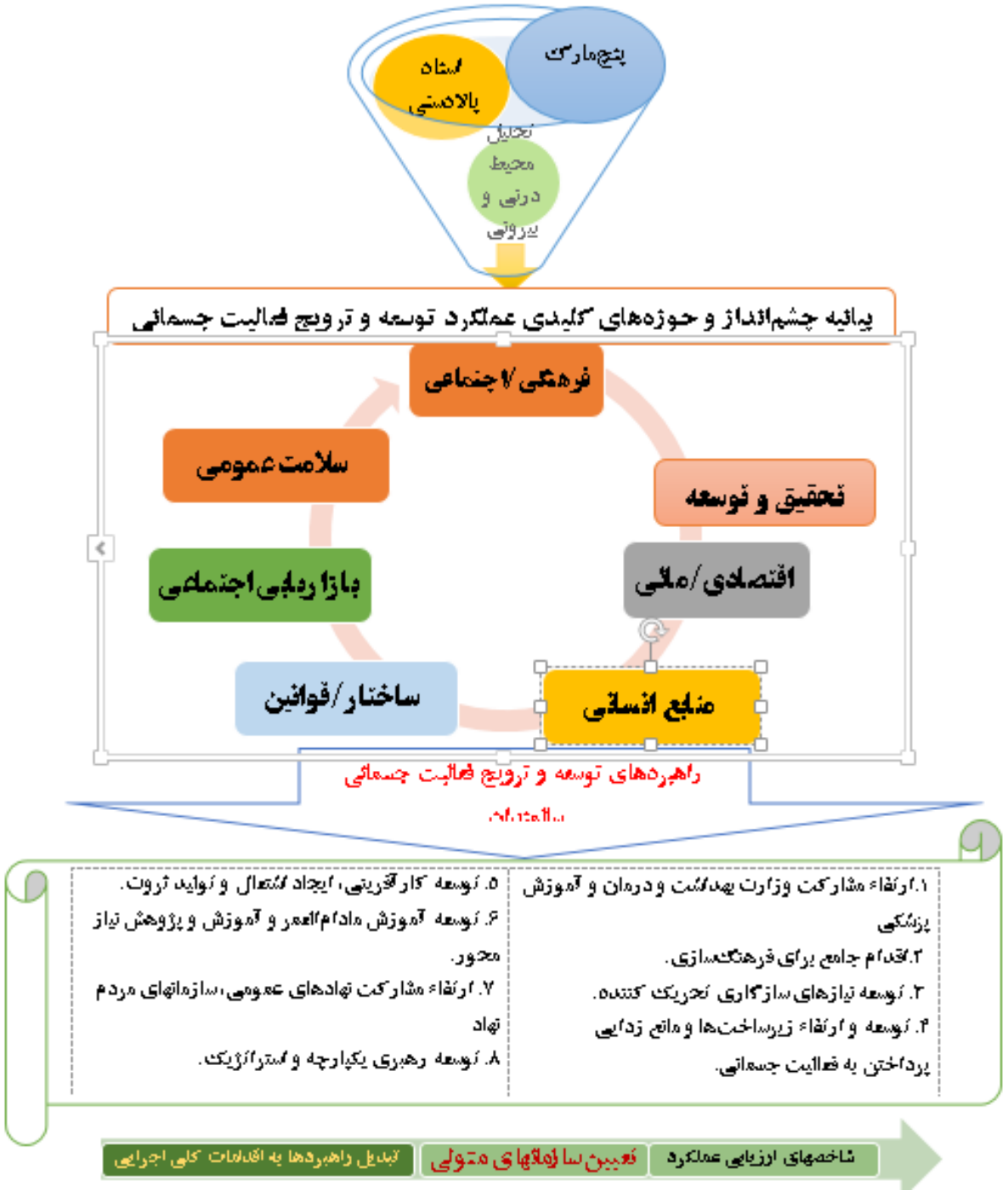
ابعاد اجرایی مدل راهبردی SOAR

Jacqueline Stavros

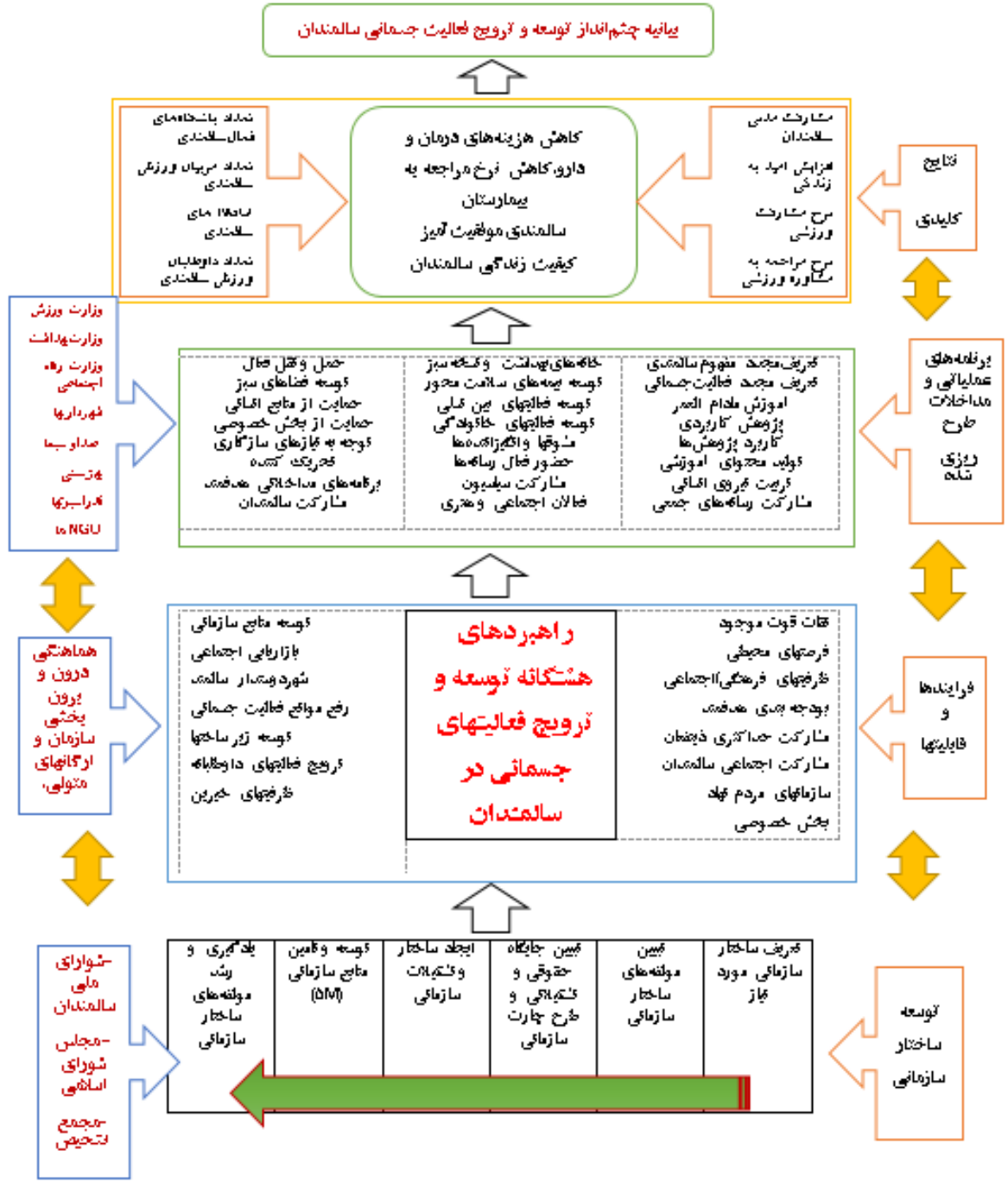


تحقیق استراتژیک	Strengths بزرگترین دارایی‌ها و جنبه‌های مثبت ما چیست؟	Opportunities بهترین فرصت‌های ممکن پیش‌روی ما کدامند؟
تصمیم‌گیری مثبت	Aspirations آینده مطلوب و آرمانی ما کدام است؟	Results بهترین نتایج قابل اندازه‌گیری چیست؟

فرایند تدوین نقشه راه برای توسعه و ترویج فعالیت‌های جسمانی در سالمندان



نقشه راه توسعه و ترویج فعالیت جسمانی سالمندان




از توجه شما
سپاسگزارم


بسم الله الرحمن الرحیم


دانشکده تربیت بدنی و علوم ورزشی

دانشگاه خوارزمی

هفته پژوهش و فناوری

سمپوزیوم

ورزش سالمندی

زمان برگزاری:

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دکتر علی عباسی

عضو هیات علمی دانشگاه خوارزمی

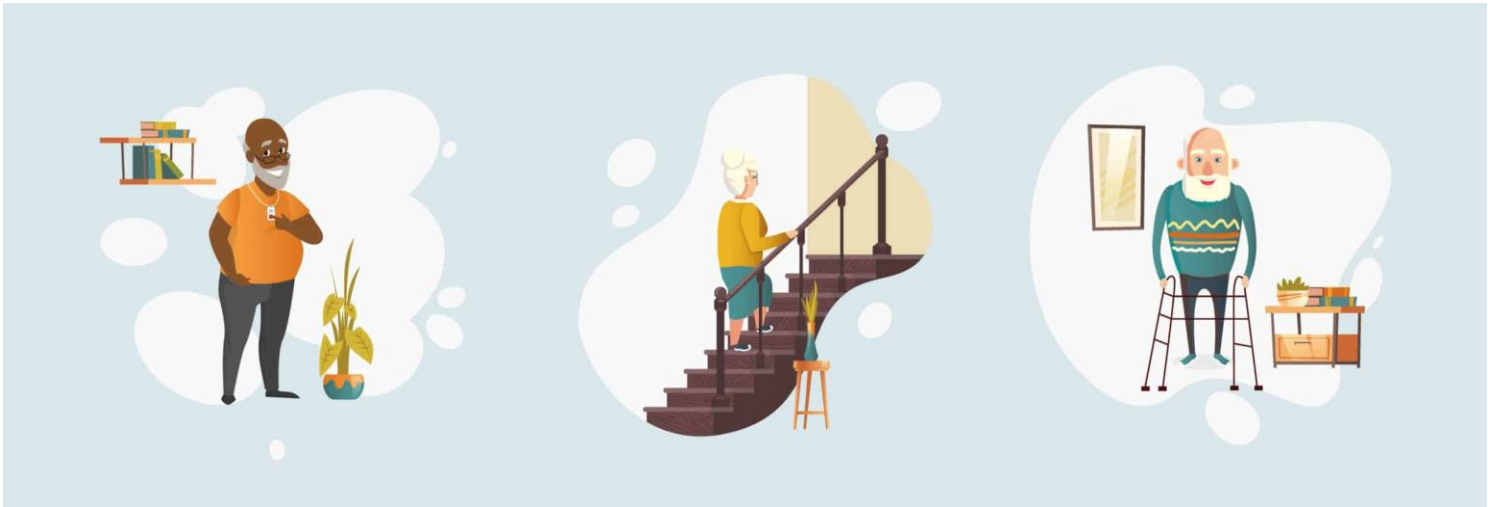
بیومکانیک زمین خوردن سالمندان و راه های پیشگیری آن

سقوط یا به زمین خوردن در سالمندان یکی از اصلی ترین عوامل شکستن استخوان های ران و لگن است که در ترکیب با عواملی مانند استئوپروسس باعث از کار افتادگی و عدم فعالیت در سالمندان می شود که می تواند منجر به مرگ شود

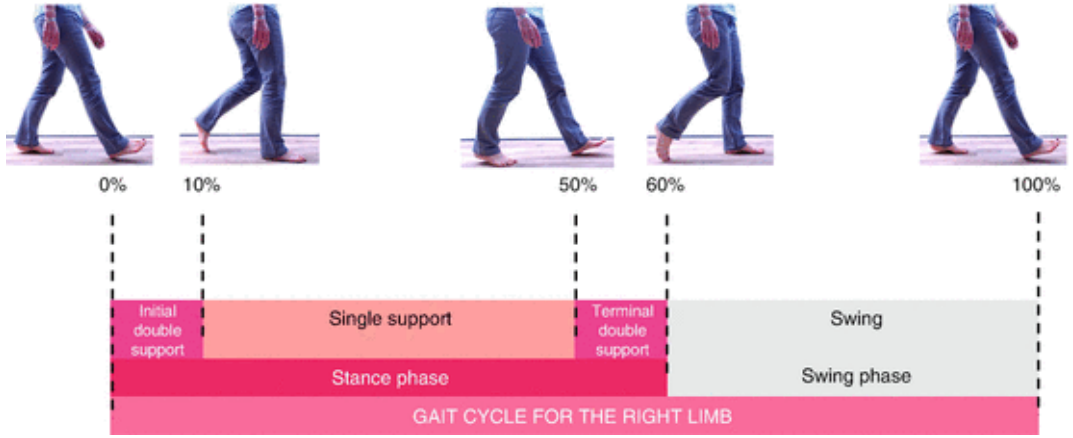
عوامل اصلی سقوط سالمندان:

1. **عوامل خارجی (سطوح، اجسام)**
2. **عوامل داخلی :**

- **اختلالات شناختی و بینایی**
- **تغییر در بیومکانیک عصبی–عضلانی**
- **کاهش قدرت عضلانی و افزایش هم انقباضی عضلانی**

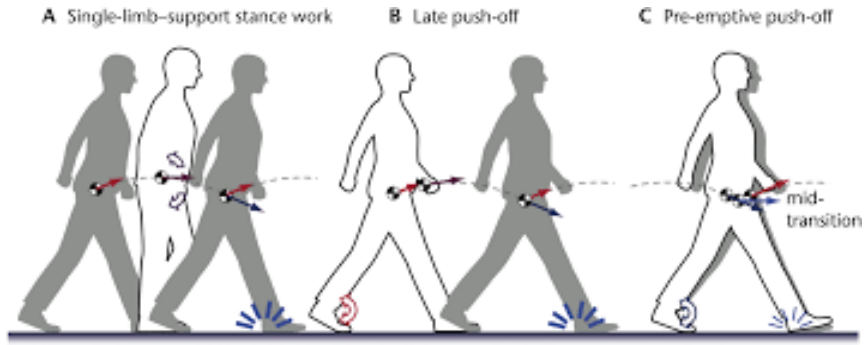


پارامترهای فضایی–زمانی راه رفتن در سالمندان:
کاهش طول گام، سرعت گام برداری، افزایش عرض گام و زمان استنس در سالمندان نسبت به جوانان



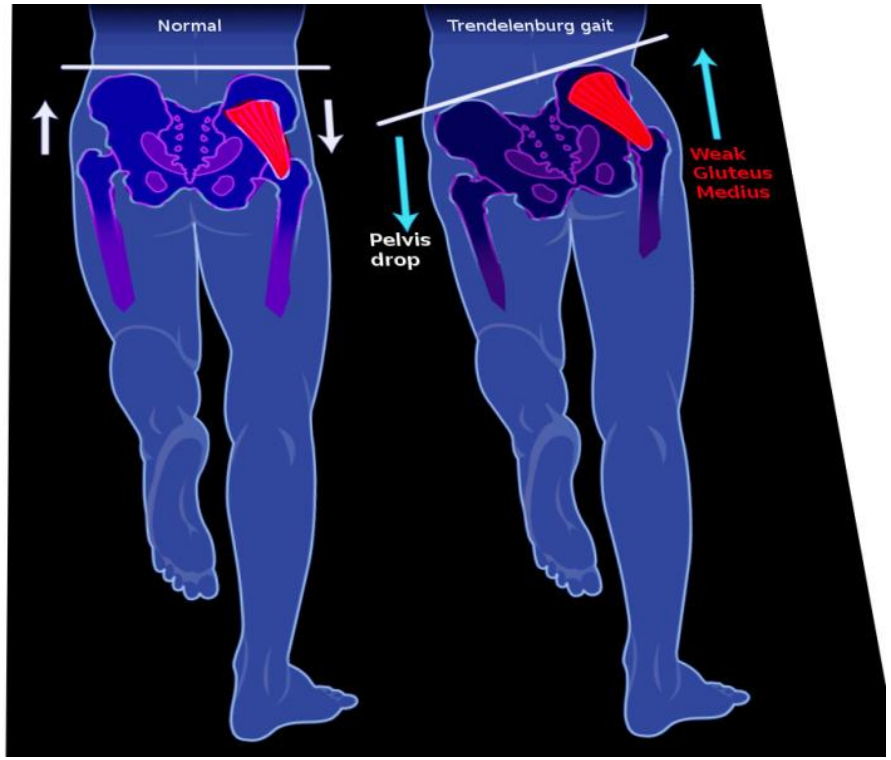
- **نقش گشتاورهای مفصلی پاها در ریکاوری تعادل در حین راه رفتن (خصوصا در حین سرخوردن)**
- **نقش بیومکانیک عصبی–عضلانی: کاهش نرخ فعالیت واحد های حرکتی و کاهش واحدهای حرکتی (کاهش فعال شدن عضلات و افزایش هم انقباضی عضلات آگونیست و آنتاگونیست)**
- **افزایش هم انقباضی پاسخی برای جبران کاهش قدرت عضلات و کاهش درجات آزادی حرکت سگمنت های بدن است که باعث افزایش سفتی مفاصل می شود**

- **نقش عضلات مرکزی بدن برای ریکاوری تعادل بالاتنه در حین راه رفتن (کاهش سرعت مرکز جرم بالاتنه)**



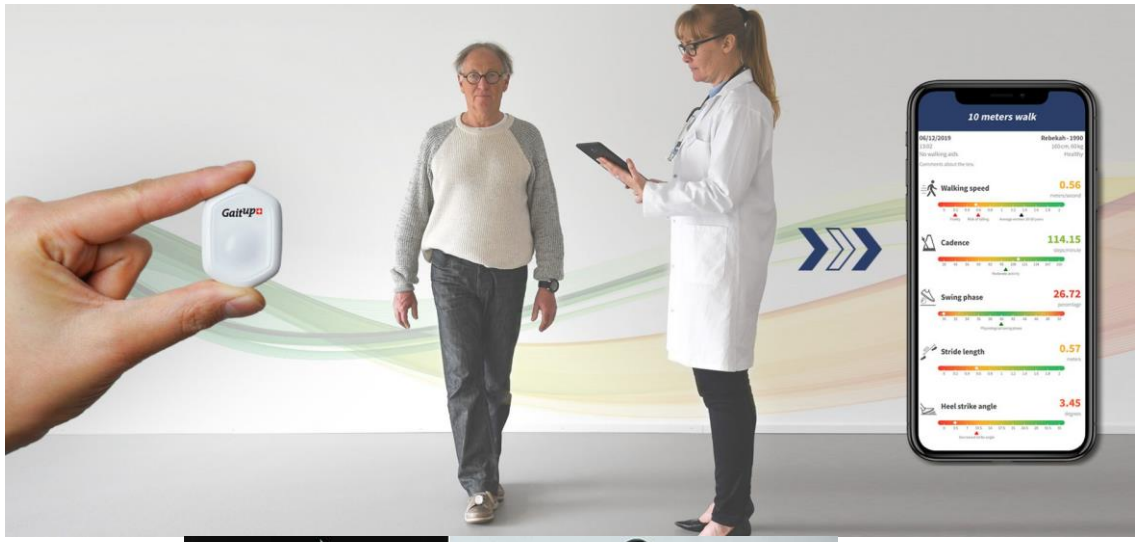
نقش عضلات مرکزی بدن

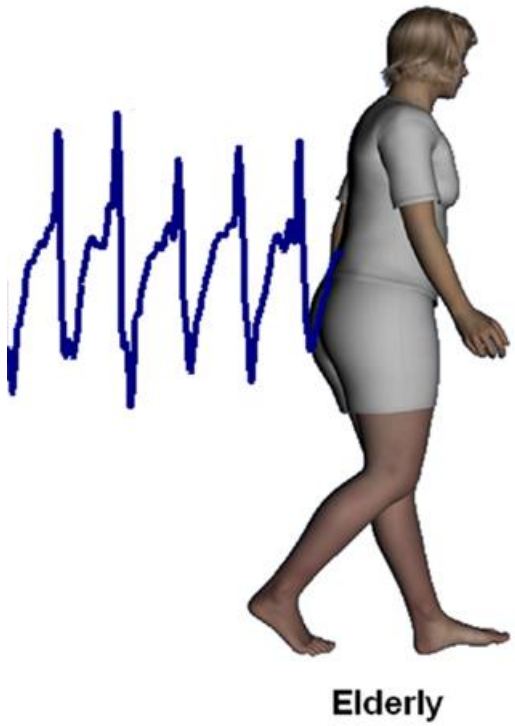
- عضلات گلوتئال جانبی در کنترل جانبی حرکت



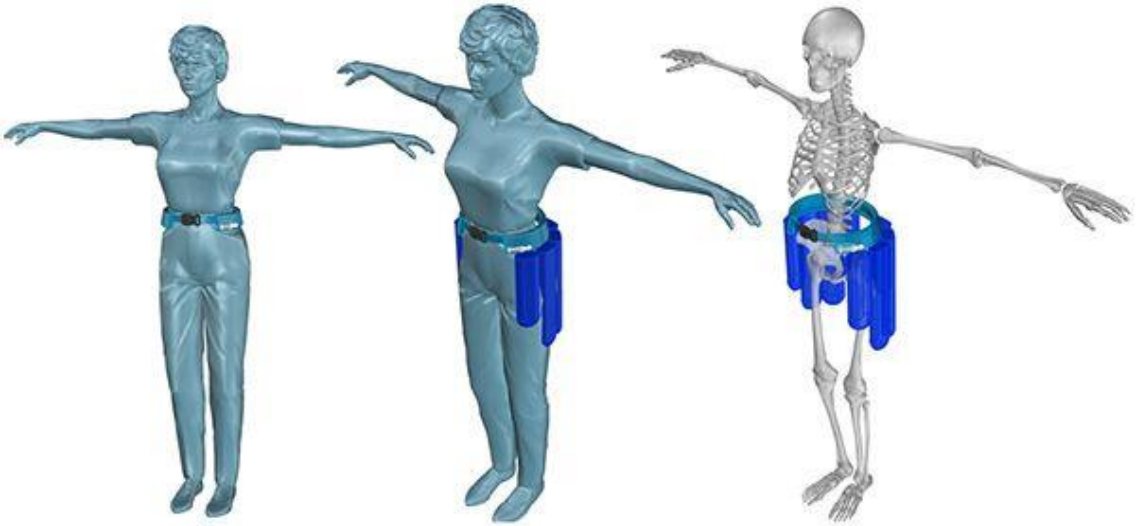
- **کاهش تماس پا با زمین در حین راه رفتن** (Foot clearance)**: انقباض عضلات فلکسور زانو، دورسی فلکسور مچ پا و فلکسور ران**
- **انجام تمرینات** Gait retraining

استفاده از هوش مصنوعی و سنسورها در مانیتورینگ و پیشگویی خطر سقوط سالمندان





استفاده از هوش مصنوعی و سنسورها در مانیتورینگ و پیشگویی خطر سقوط سالمندان




سپاس از حسن توجه شما


بسم الله الرحمن الرحیم


دانشکده تربیت بدنی و علوم ورزشی

دانشگاه خوارزمی

هفته پژوهش و فناوری

سمپوزیوم

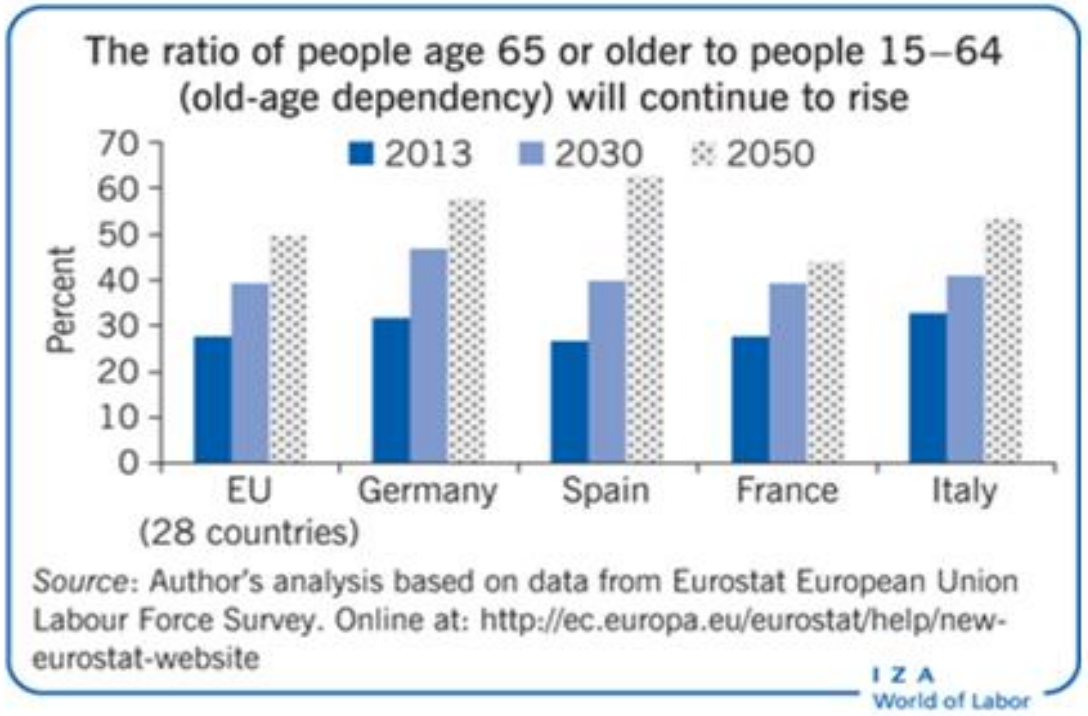
ورزش سالمندی

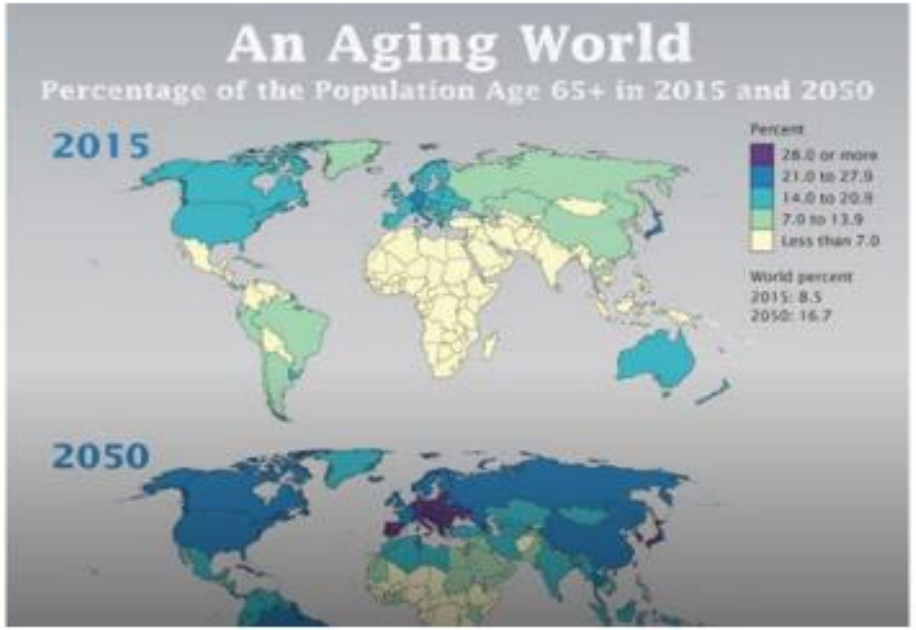
دکتر حمید رجبی

عضو هیات علمی دانشگاه خوارزمی

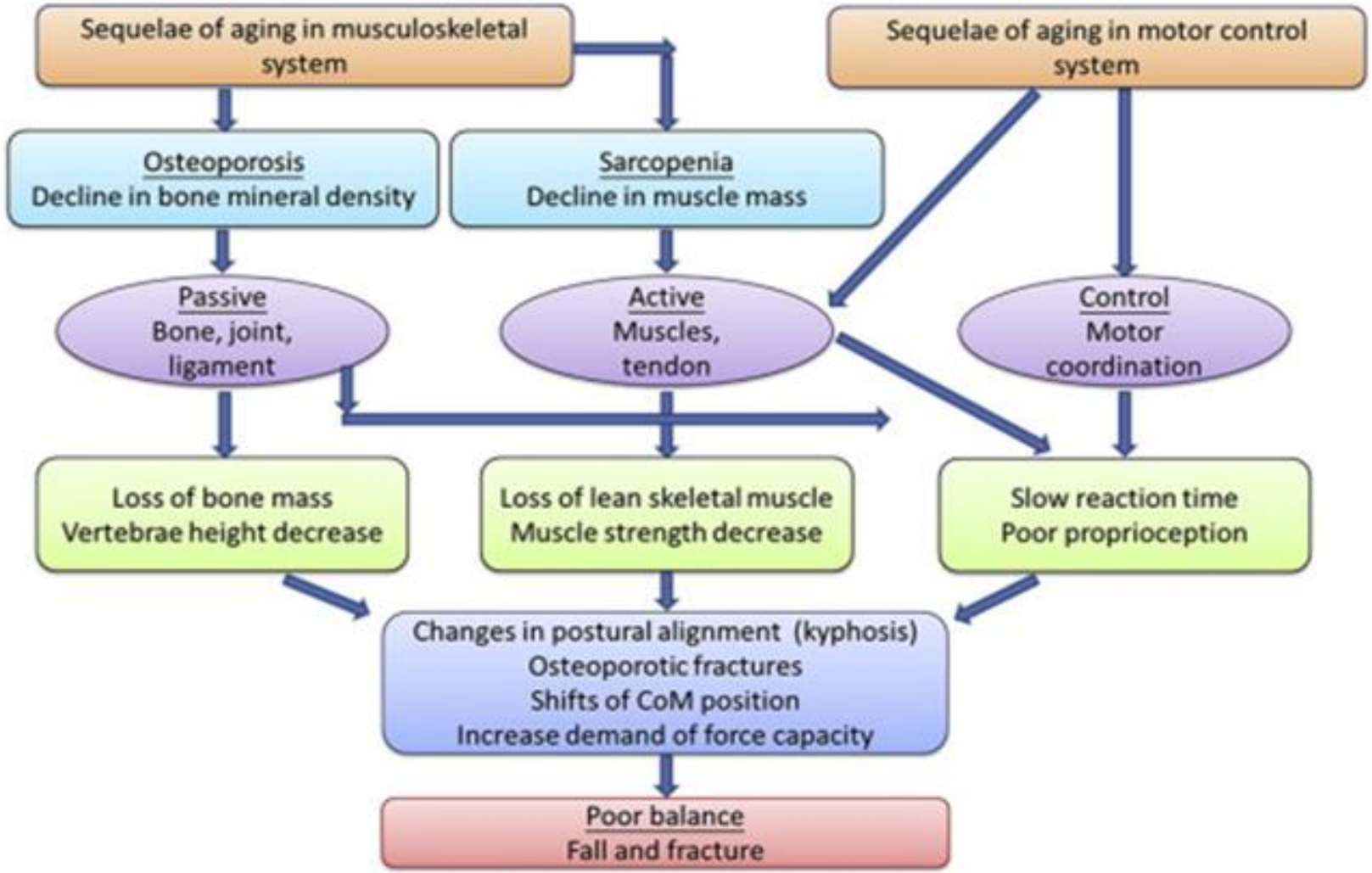
اصول و روش شناسی تمرین در ورزش سالمندان

شیوع سالمندی

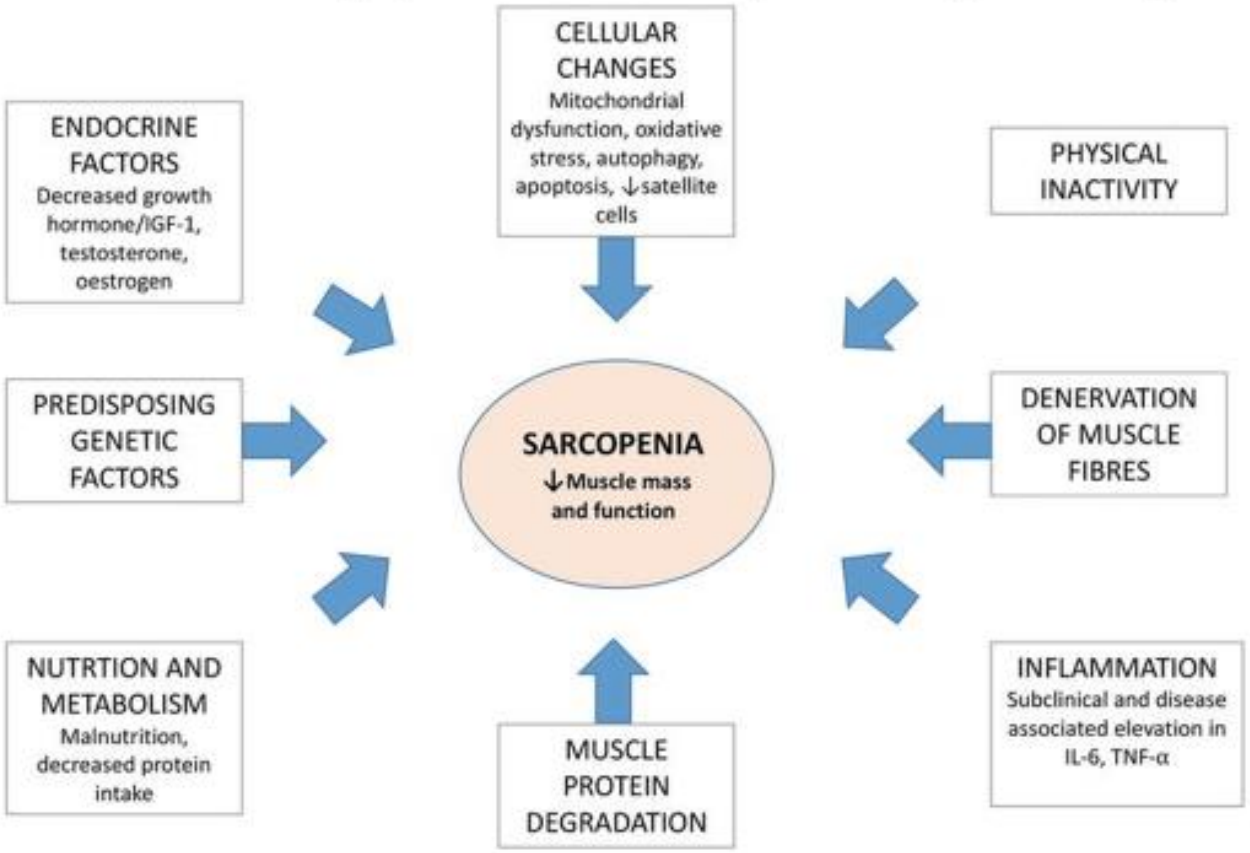




every third person will be over 60 years old in 2035.

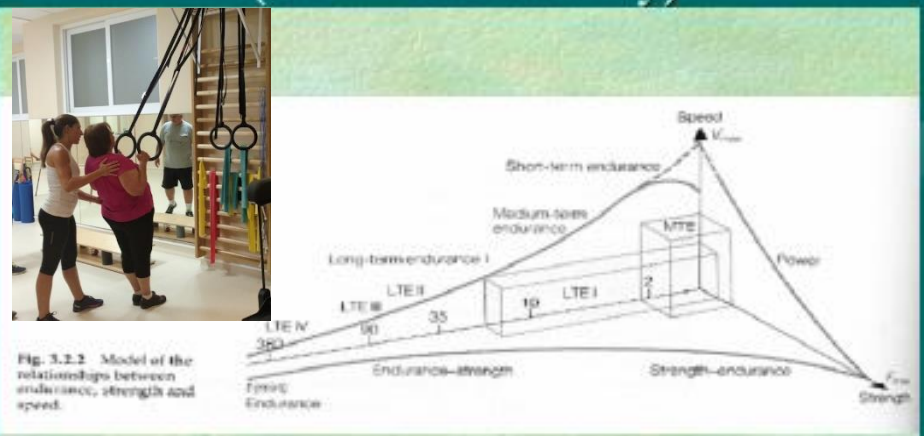

Sequelae of aging in musculoskeletal system
Sequelae of aging in motor control system
Osteoporosis
Decline in bone mineral density
Sarcopenia
Decline in muscle mass
Passive
Bone, joint, ligament
Active
Muscles, tendon
Control
Motor coordination
Loss of bone mass
Vertebrae height decrease
Loss of lean skeletal muscle
Muscle strength decrease
Slow reaction time
Poor proprioception
Changes in postural alignment (kyphosis)
Osteoporotic fractures
Shifts of CoM position
Increase demand of force capacity
Poor balance
Fall and fracture

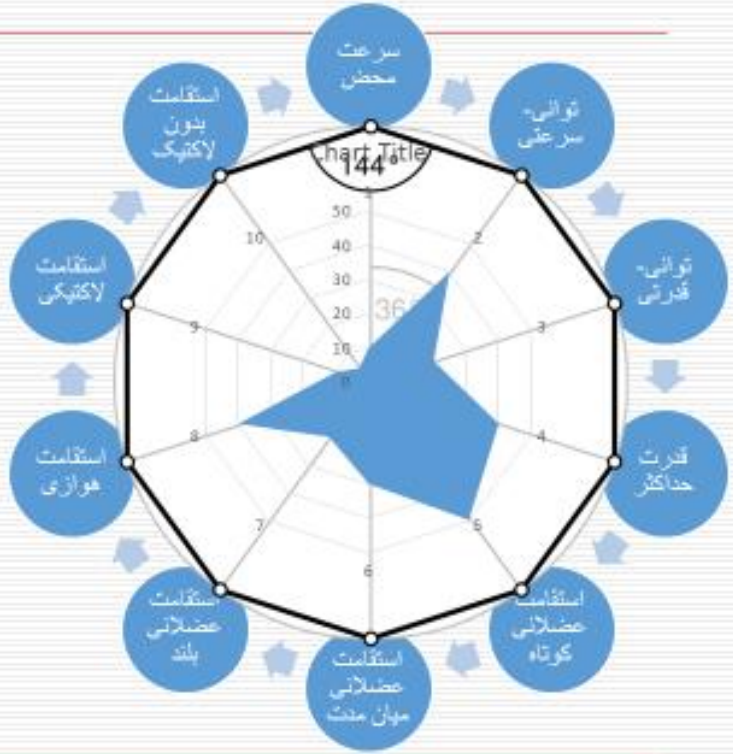
Elderly problems(sarcopenia)



تعیین نیازهای زیست حرکتی

Specificity in training adaptation (bio motor ability)





Benefit of Strength training

Increase or maintain muscle strength

Improve balance, coordination and mobility

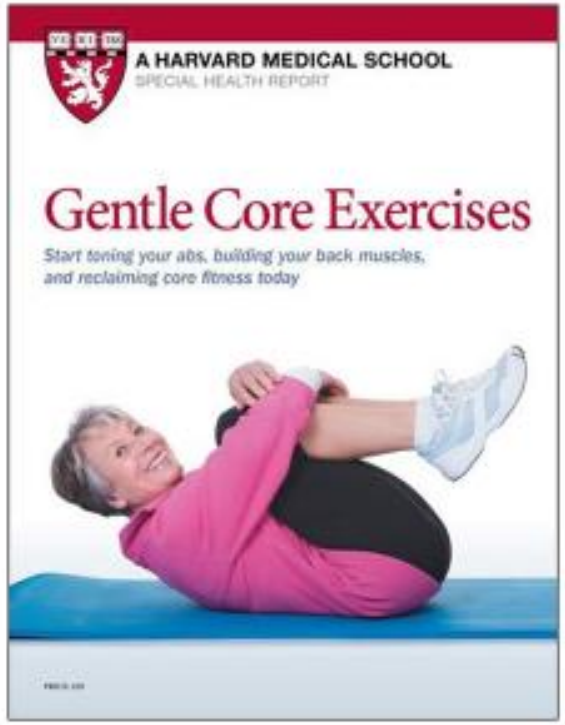
Improve confidence to move about independently

Reduce risk of falling

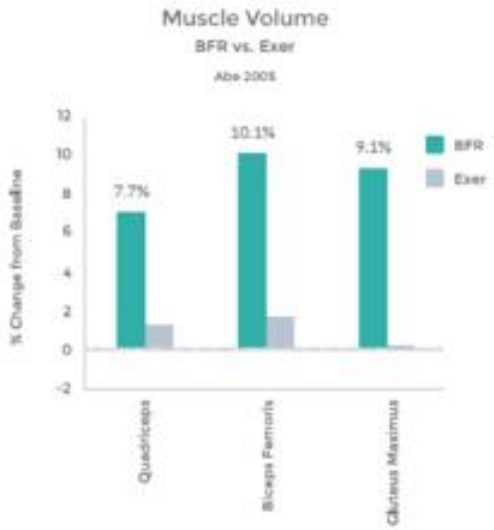
Improve mood and overall well-being

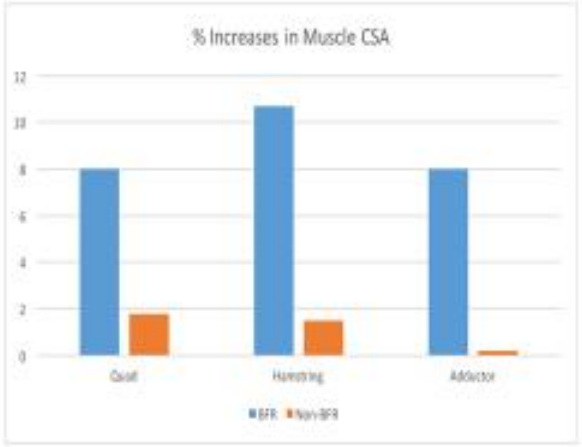
تمرین مقاومتی با کش

Core stability



تمرین با محدودیت جریان خون





Suggested Weekly Exercise Schedule for the 65+

Sun	Mon	Tue	Wed	Thu	Fri	Sat

A minimum of **150 minutes** (2.5 hours) of **MODERATE** intensity activity each week

OR

75 minutes (1.25 hours) of **VIGOROUS** intensity activity each week

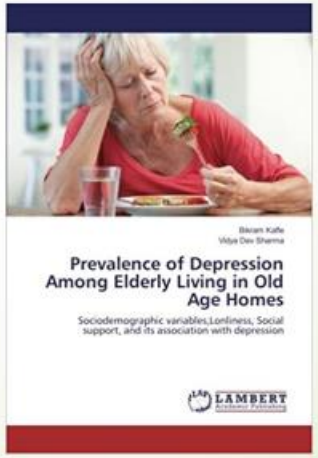
eugeria

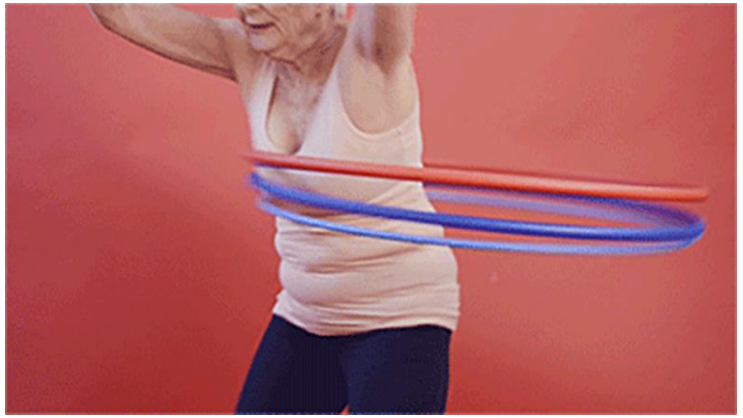
تمرین کششی

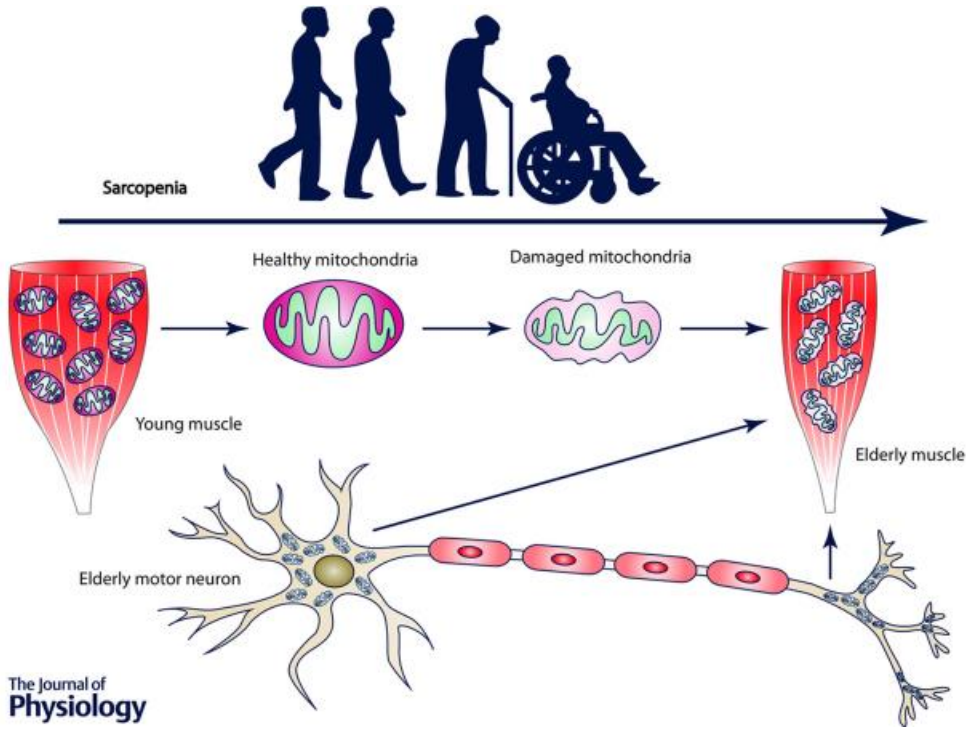

liveyogalife™
be who you are!
CHAIR YOGA: LEVEL 2/ CLASS 3
Teacher : James Bryan
Intensity: Energetic
40 minutes
Back to Sitting
10. Elbow Up/Down
11. Hip Flexion
12. Back Bend
13. Quad Stretch
Back to Sitting
14. Supine Legs Up
Sitting - FINISH
© Copyright 2009 Live Yoga Life Pty Ltd
3

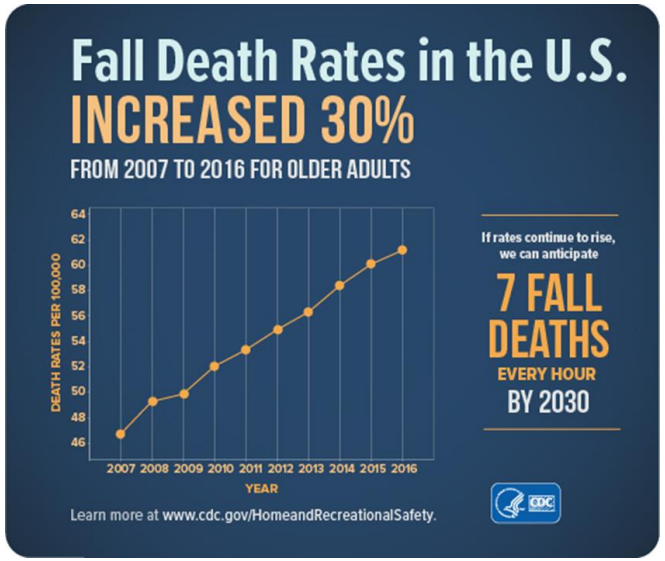
اصل نشاط


Zumba
Cardio
Dance
Workout
For Seniors


Prevalence of Depression Among Elderly Living in Old Age Homes
Sociodemographic variables,Lonliness, Social support, and its association with depression
LAMBERT




Sarcopenia
Healthy mitochondria
Damaged mitochondria
Young muscle
Elderly muscle
Elderly motor neuron
The Journal of Physiology


Fall Death Rates in the U.S.
INCREASED 30%
FROM 2007 TO 2016 FOR OLDER ADULTS
DEATH RATES PER 100,000
64
62
60
58
56
54
52
50
48
46
2007 2008 2009 2010 2011 2012 2013 2014 2015 2016
YEAR
If rates continue to rise, we can anticipate
7 FALL DEATHS
EVERY HOUR
BY 2030
Learn more at www.cdc.gov/HomeandRecreationalSafety.
CDC

اصل تمرین پایدار

اصل حمایت ، همکاری و همراهی

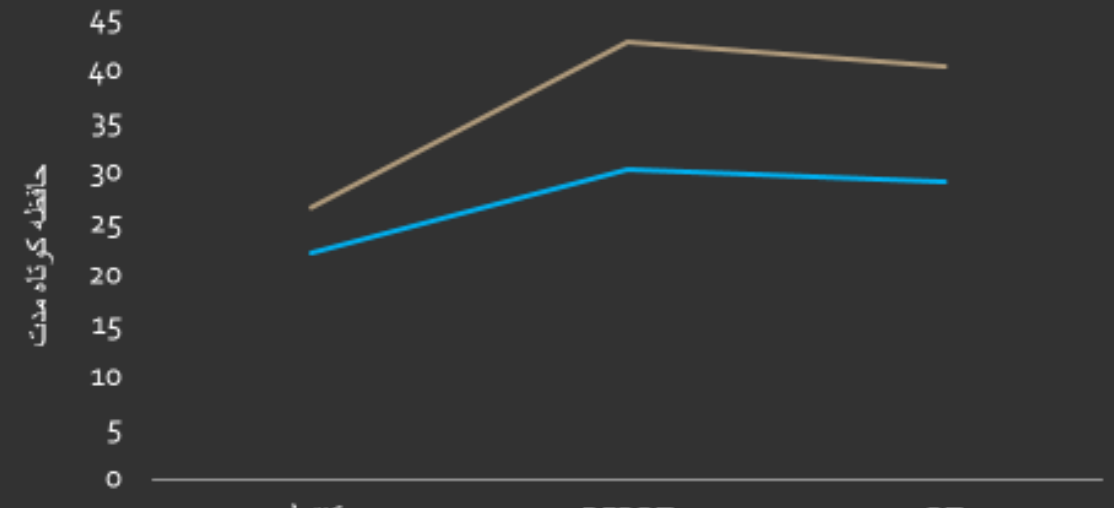
تمرین روی سطوح ناپایدار

تمرین روی سطح ناپایدار

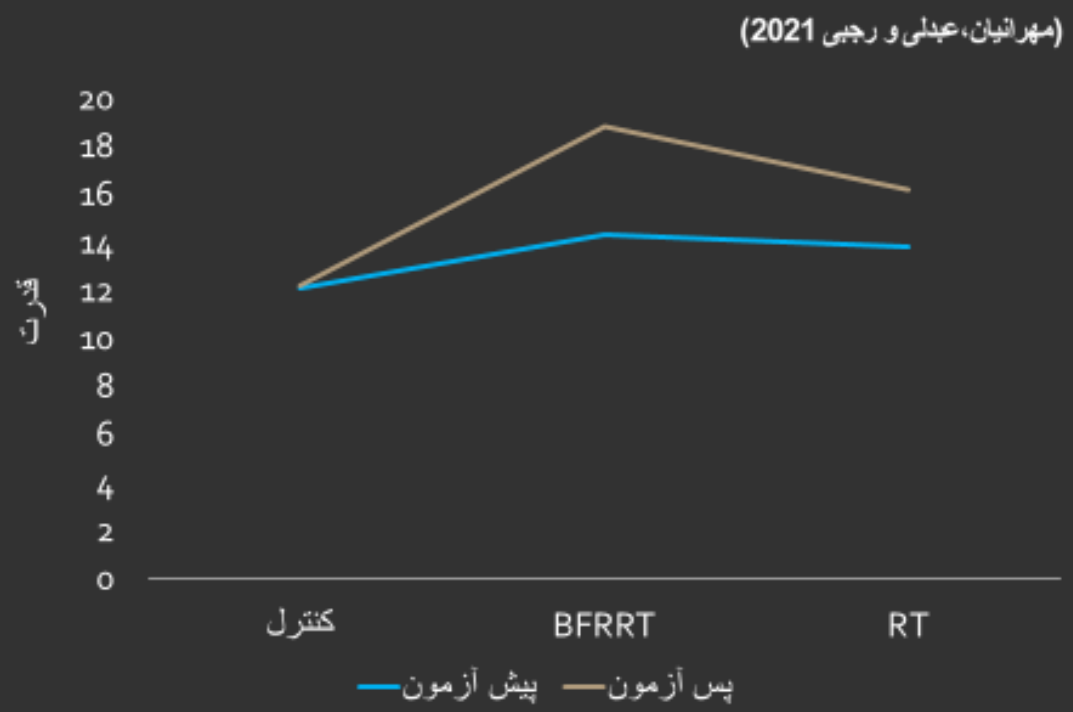
- افزایش هماهنگی بین عضلات موافق و مخالف، بهبود سینرژی (بهم، 1995)
- ایجاد هماهنگی و به‌کارگیری الگوهای عصبی‌عضلانی مناسب (آندرسون و بهم، 2005)
- افزایش اطلاعات آوران‌های عضله و سازگاری‌های عصبی‌عضلانی (مک براید و همکاران، 2006)

تاثیر تمرین مقاومتی ناپایدار همراه با محدودیت جریان خون بر حافظه کوتاه مدت

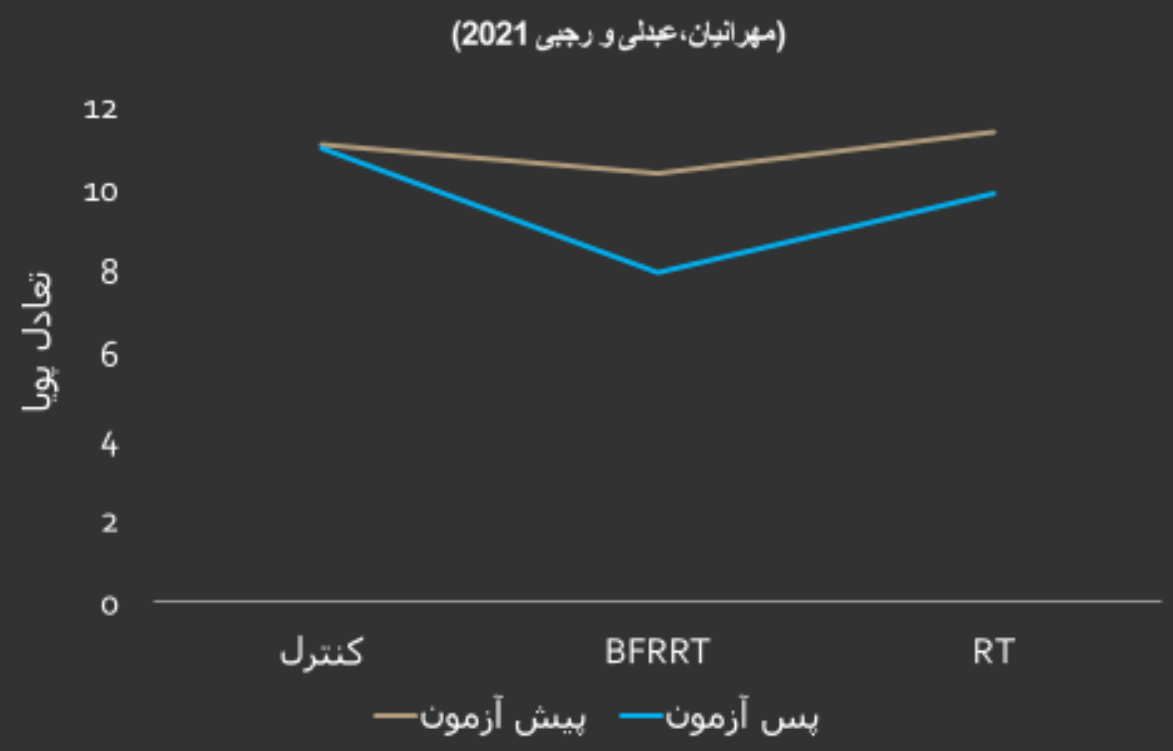
(مهرانیان، عبدلی و رجبی 2021)



تاثیر تمرین مقاومتی ناپایدار همراه با محدودیت جریان خون بر قدرت عضلات اندام تحتانی



تاثیر تمرین مقاومتی ناپایدار همراه با محدودیت جریان خون بر تعادل پویا

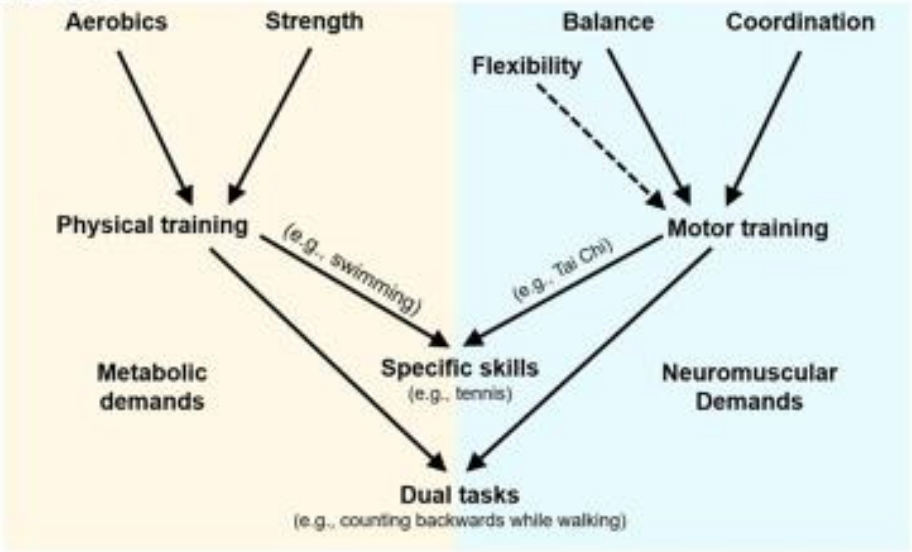


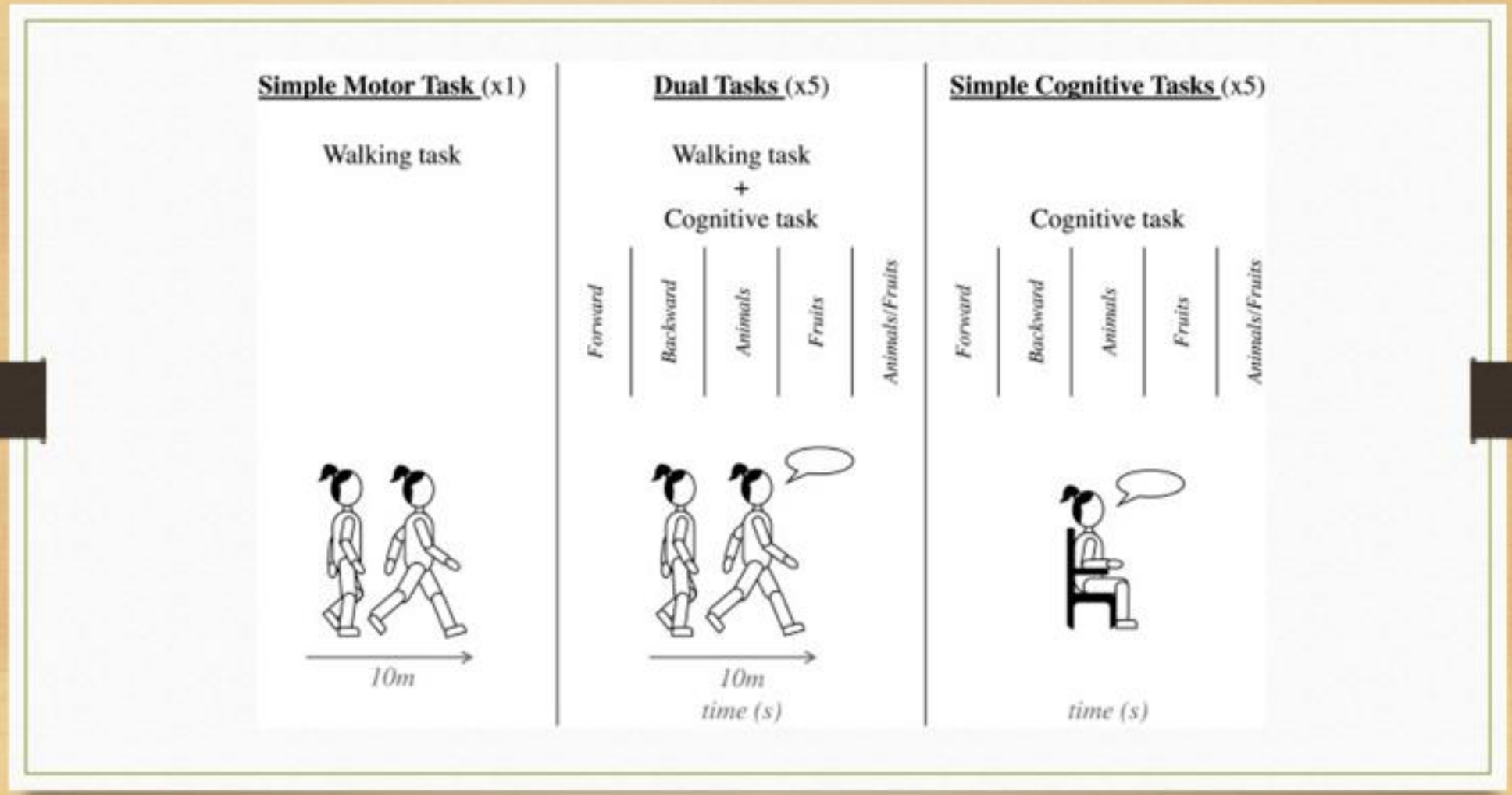
اصل ذهن فعال

- تحریک عوامل رشد مغزی
- تقویت توانایی ادراکی شناختی و خودآگاهی

Brain training and brain conditioning

- Indirect effect of physical activity
- Training with attention on movement
- Training with attention on another sources




Simple Motor Task (x1)
Walking task
10m
Dual Tasks (x5)
Walking task
+
Cognitive task
Forward
Backward
Animals
Fruits
Animals/Fruits
10m
time (s)
Simple Cognitive Tasks (x5)
Cognitive task
Forward
Backward
Animals
Fruits
Animals/Fruits
time (s)

زمان رسیدن به واماندگی با دو شدت مختلف 1RM و بار شناختی

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Shoulder press

	نوع تمرین دوگانه وامانده‌ساز	میانگین ± انحراف معیار	Sh-W	t	P
زمان رسیدن به واماندگی در پرس سرشانه	بار مقاومتی 70 درصد 1RM و بار شناختی پایین	14/09 ±3/06	0/30	-3/15	0/005
	بار مقاومتی 30 درصد 1RM و بار شناختی بالا	20/78 ±8/97	0/47		

Leg press

	نوع تمرین دوگانه وامانده‌ساز	میانگین ± انحراف معیار	Sh-W	t	P
زمان رسیدن به واماندگی در پرس پا	بار مقاومتی 70 درصد 1RM و بار شناختی پایین	52/60 ±16/37	0/36	0/131-	0/897
	بار مقاومتی 30 درصد 1RM و بار شناختی بالا	53/20 ±17/46	0/57		

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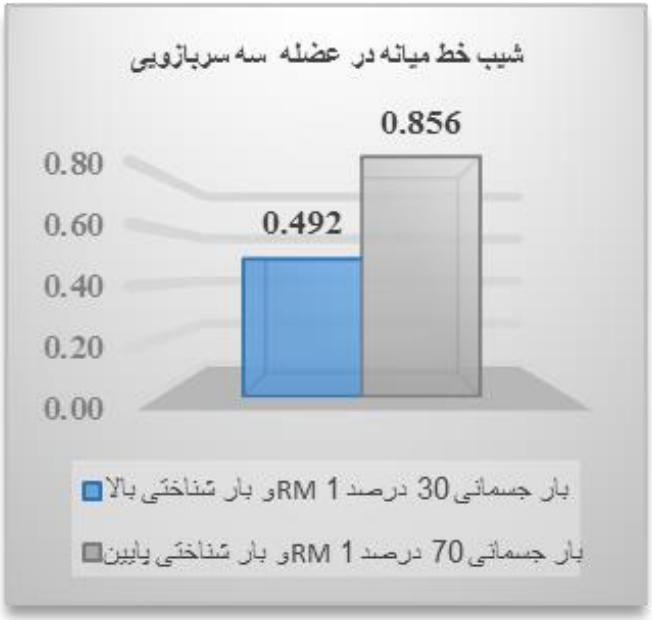

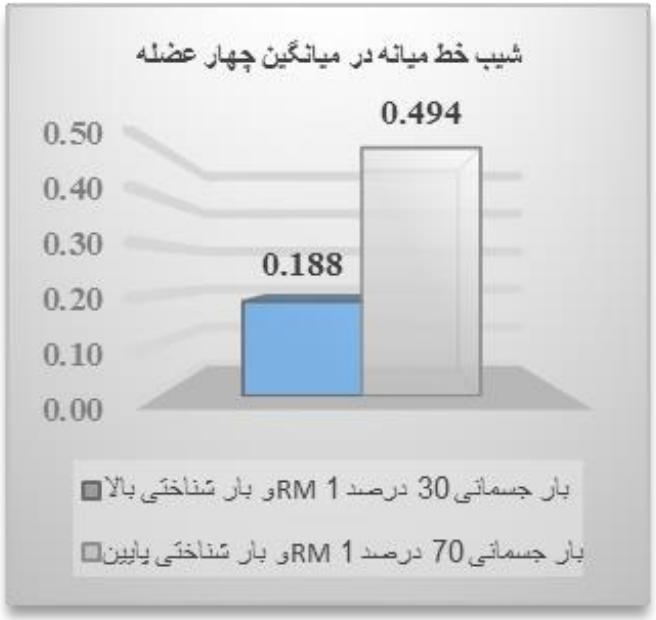

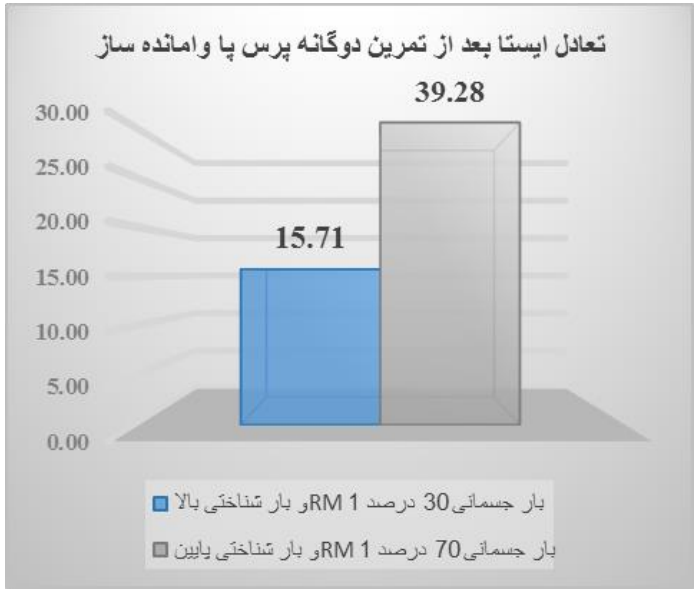

	نوع تمرین دوگانه واماندەساز	میانگین ± انحراف معیار	Sh-W	t	P
زمان رسیدن به واماندگی در پرس پا	بار مقاومتی 70 درصد 1RM و بار شناختی پایین	-0/139±0/087	0/19	2/40	0/026
	بار مقاومتی 30 درصد 1RM و بار شناختی بالا	-0/077±0/079	0/18		

	نوع تمرین دوگانه واماندەساز	میانگین ± انحراف معیار	Sh-W	t	P
زمان رسیدن به واماندگی در پرس سرشانه	بار مقاومتی ۷۰ درصد 1RM و بار شناختی پایین	-۰/۸۵۶ ±۰/۷۵۴	۰/۹۹	۲/۲۱	۰/۰۴
	بار مقاومتی ۳۰ درصد 1RM و بار شناختی بالا	-۰/۴۹۲ ±۰/۴۹۱	۰/۶۵		

زمان رسیدن به واماندگی با دو شدت مختلف 1RM و بار شناختی

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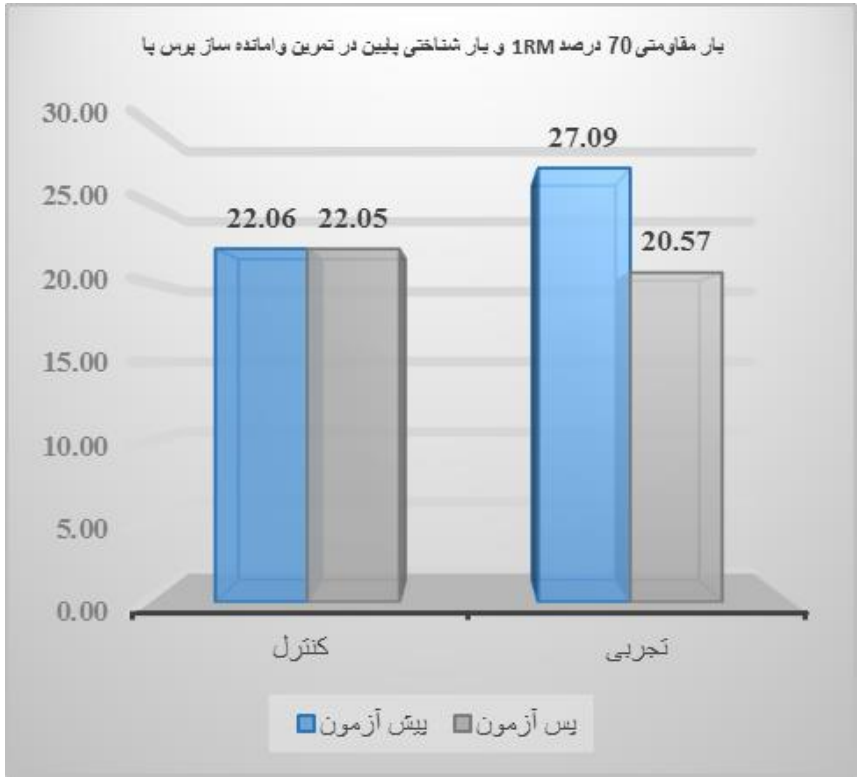
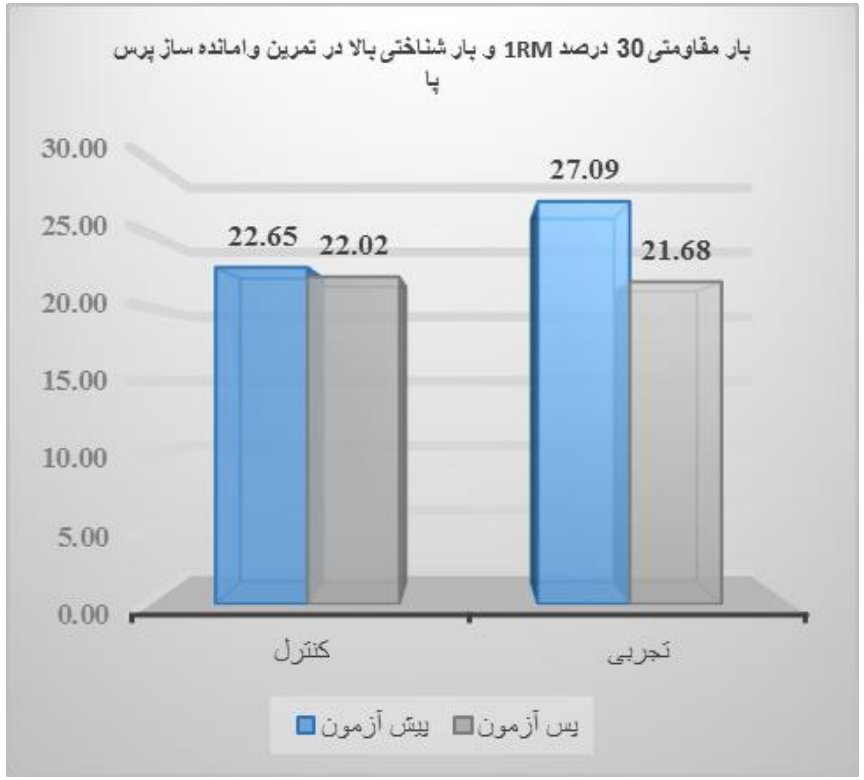
تعادل ایستا در دو شدت مختلف 1RM و بار شناختی





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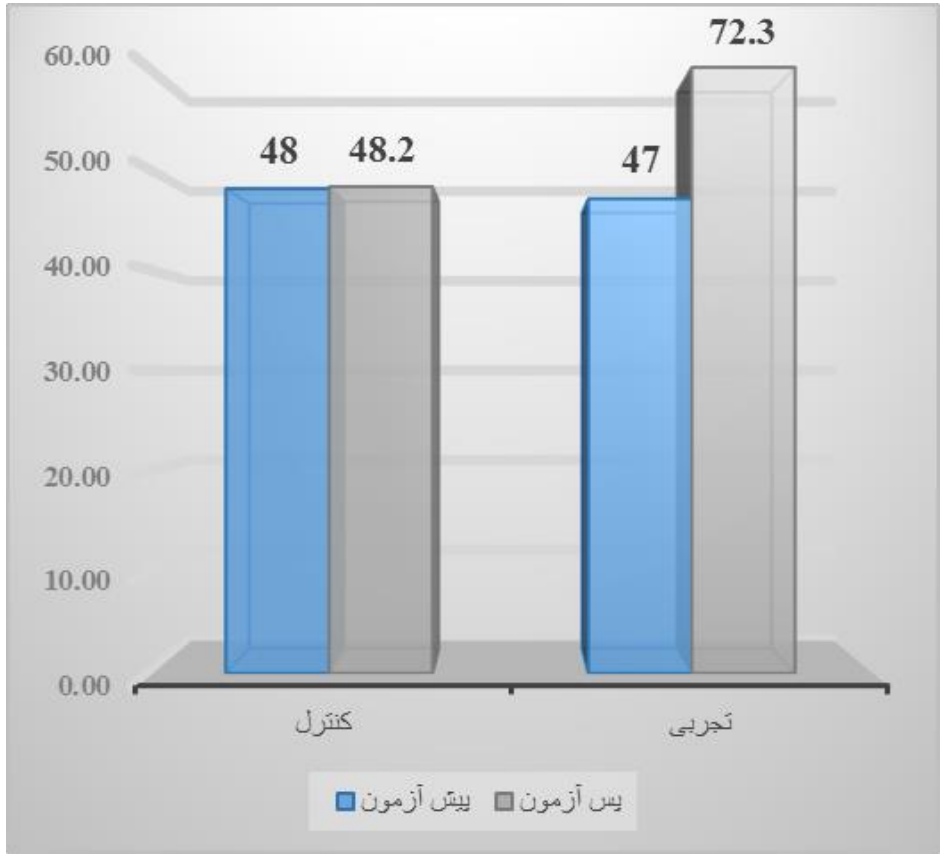
کیفیت زندگی



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سپاس از حسن توجه شما


بسم الله الرحمن الرحیم

دانشگاه خوارزمی

هفته پژوهش و فناوری

سمپوزیوم

ورزش سالمندی

دکتر حسن صادقی

دکتری آسیب شناسی و حرکات اصلاحی دانشگاه پوترا مالزی

بازی های ویدئویی و توانایی های حرکتی سالمندان

Exergame

- **Fitness game**, **exergaming** or **exer-gaming**
- ("exercise" and "gaming"), or video games Or Virtual Reality
- Exergaming is defined as **technology-driven physical activities**, such as video game play, that requires participants to be physically active or exercise in order to play the game.
- Exergaming relies on technology that tracks body movement or reaction. The genre has been credited with upending the stereotype of gaming as a sedentary activity, and promoting an active lifestyle. Exergames are seen as evolving from technology changes aimed at making video games more fun.

Types of Exergame

- Sony EyeToy
- PlayStation 2
- Xbox Kinect
- Nintendo Wii
- Exergame Mobile apps

History of exergame

- Exergaming was developed in the late **1980s** as video games became popular.
- HighCycle and Virtual Racquetball, both developed by Autodesk, were two early types of video games that used rudimentary aspects of exergaming, such as head-mounted displays

Exergaming gained popularity during the COVID-19 pandemic.

The COVID-19 pandemic is having an intense impact on the functional capacity of older adults, making them more vulnerable to frailty and dependency.

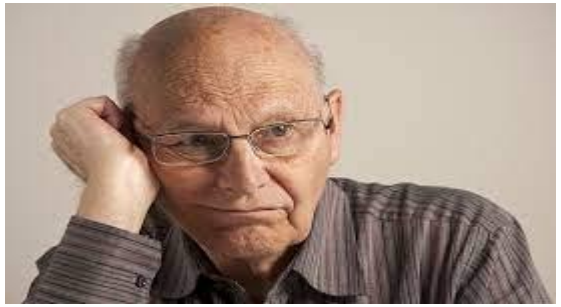
prevention of the functional impairment

Reduce depression

Increase well-being and quality of life.

Why exergames for adult

- Traditional exercise is boring for older adults



Motivation (Favorite Games)

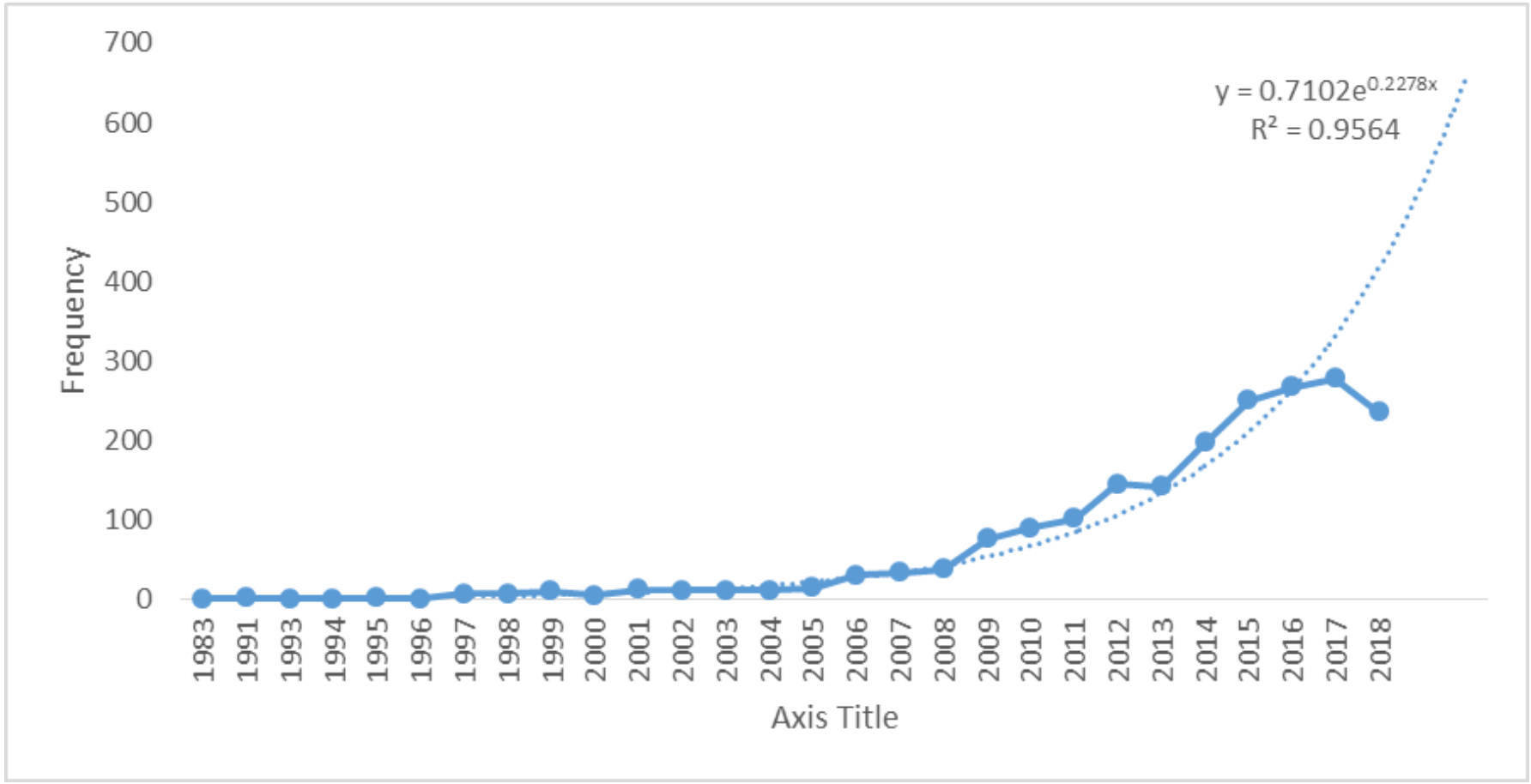
Enjoyment

Increase Self-esteem

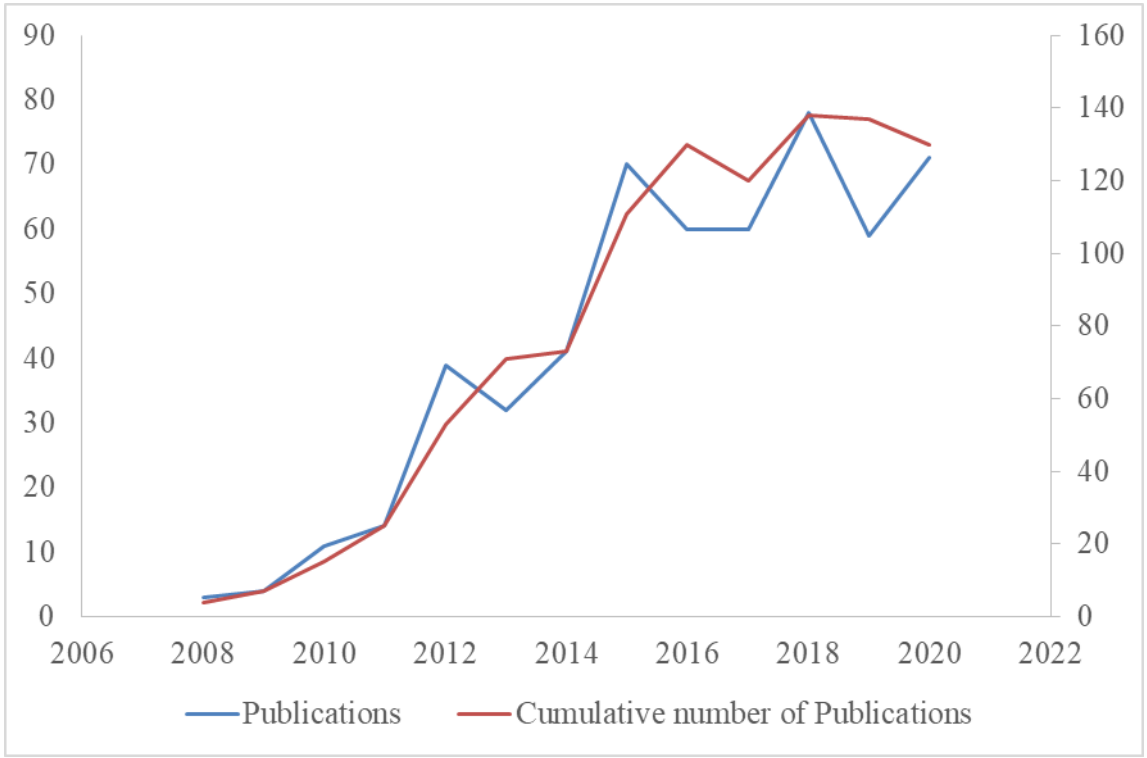
Increase exercise adherence

- Xbox Kinect is well-known as one of the most cited solution in order to enhance the elderly performance
- XbK is a motion controller that eliminates the use of game-pad or controller for gaming.
- This sensor can also detect the position and limbs in front of the TV set.

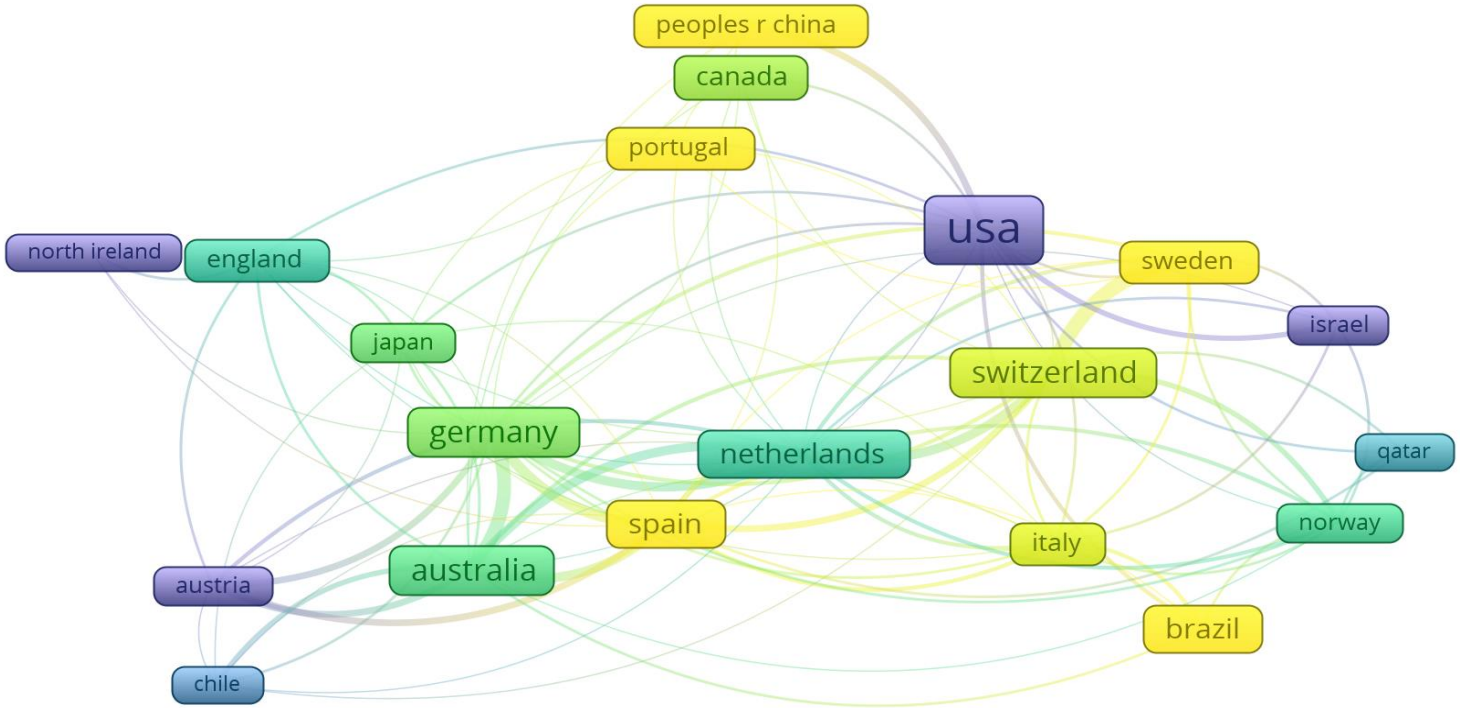
Number of published papers from 1983 to 2018



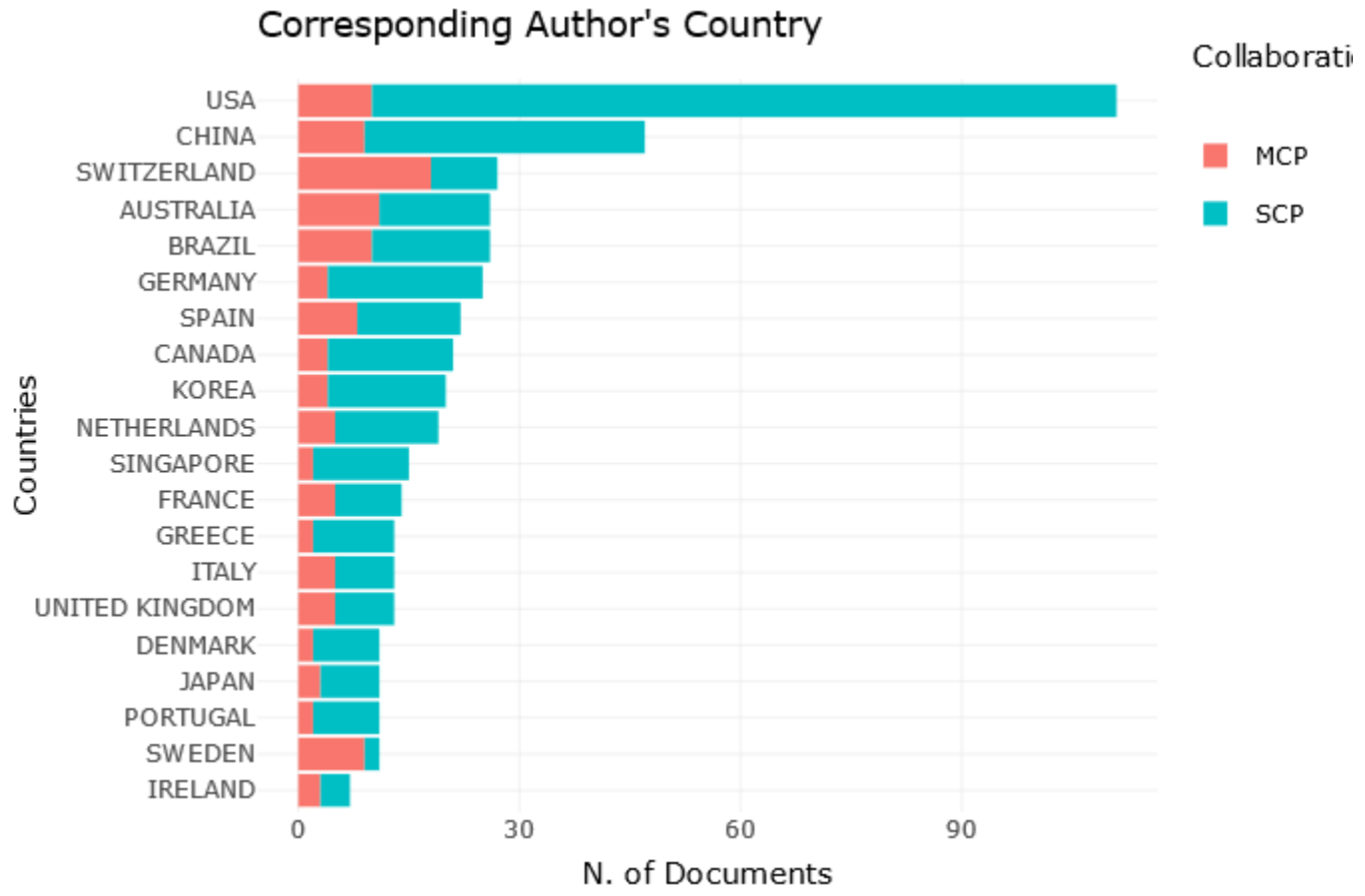
Number of published papers from 2008 to 2020



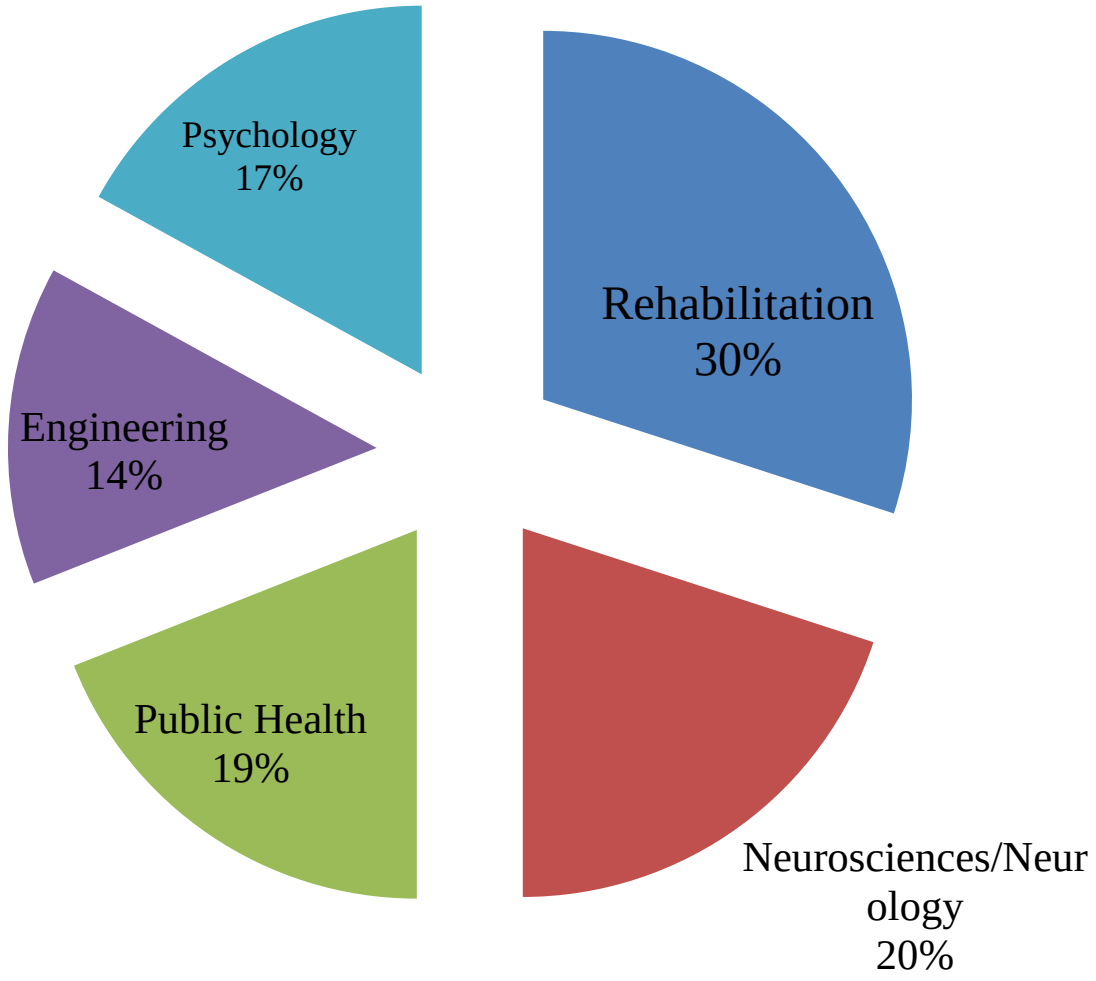
Emerging countries among the top 20 countries



Corresponding Author’s Country



Categories


Psychology
17%
Rehabilitation
30%
Engineering
14%
Public Health
19%
Neurosciences/Neurology
20%

Active video game or exergame

- Physiological
- physical mobility
- Balance
- Cognition
- Strength
- Gait

Suggested Exercise protocol for Exergame

- Xbox Kinect Exercise (Light Race, Target kick, Goalkeeper game)
- 8 weeks / 3 times per week / 40 minutes

Table 1. Description of Wii Fit exergames

EXERCISE	GAME	GENERAL DESCRIPTION	GOALS
Aerobic exercise	Jogging	The player walks or jogs along the virtual paths and routes by following the game's avatar.	Increase mobility and aerobic capacity
Strength exercise	Lunge	The player steps on the balance board and follows the virtual trainer to perform lunge exercises on each leg.	Strengthen quadriceps muscles, gluteal muscles, and hamstrings
Balance exercises	Penguin slide	The player steps on balance board and shifts his/her weight side to side to make a virtual penguin catch fish.	Improve balance
	Table tilt	The player steps on the balance board and shifts his/her weight in all directions to direct virtual balls into holes on the shifting platform.	Improve balance
Yoga exercises	Chair	The player steps on the balance board and follows the virtual trainer to perform the squat pose.	Strengthen hamstrings, quadriceps, gluteals, and the erector muscles of the back to improve balance and stability
	Deep breathing	Participants step on the balance board and follow the virtual trainer to breathe in sync with the blue circle on the interface.	Improve breathing, metabolism, and circulation

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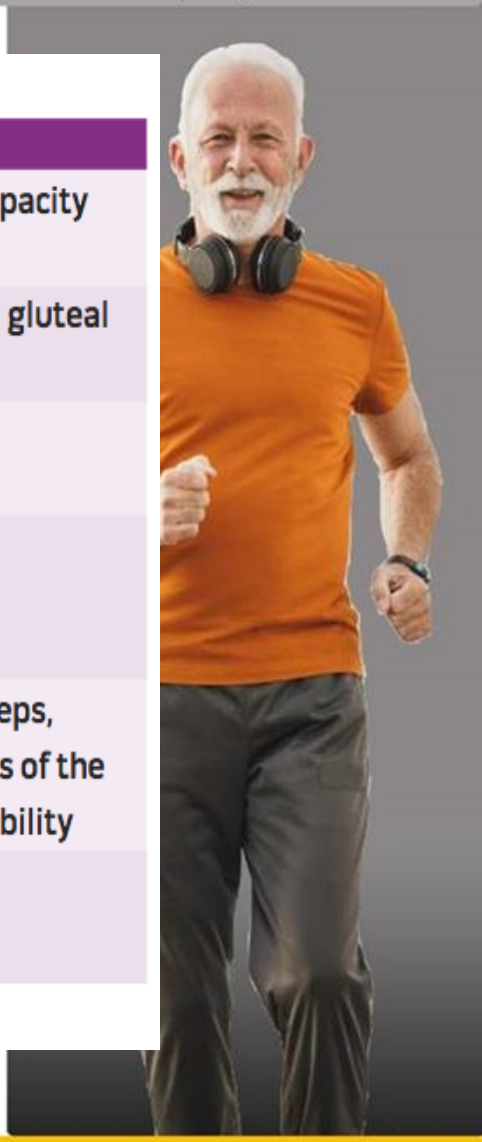



سپاس از حسن توجه شما

دانشگاه خوارزمی

هفته پژوهش و فناوری

سمپوزیوم

ورزش سالمندی

دکتر زهرا پورآقایی

عضو هیات علمی دانشگاه علامه طباطبائی

پایبندی در ورزش سالمندی

- successful aging, characterized by minimal functional decline, is an achievable goal for many adults.

- Although the benefits of regular physical activity have been well documented the majority of adults in developed countries do not exercise.

Adherence

- What is adherence?
- Measurement of adherence.

.

The literature suggests that it is in the first six months that an older adult commits to attending a class and it is accepted that this is the time-frame for the behavior to become embedded.

Factors Influencing Exercise Adherence Among Older Adults.

physiological factors

perceived social influences and activity preferences.

Psychological factor

Individual

Components in Adherence to Exercise

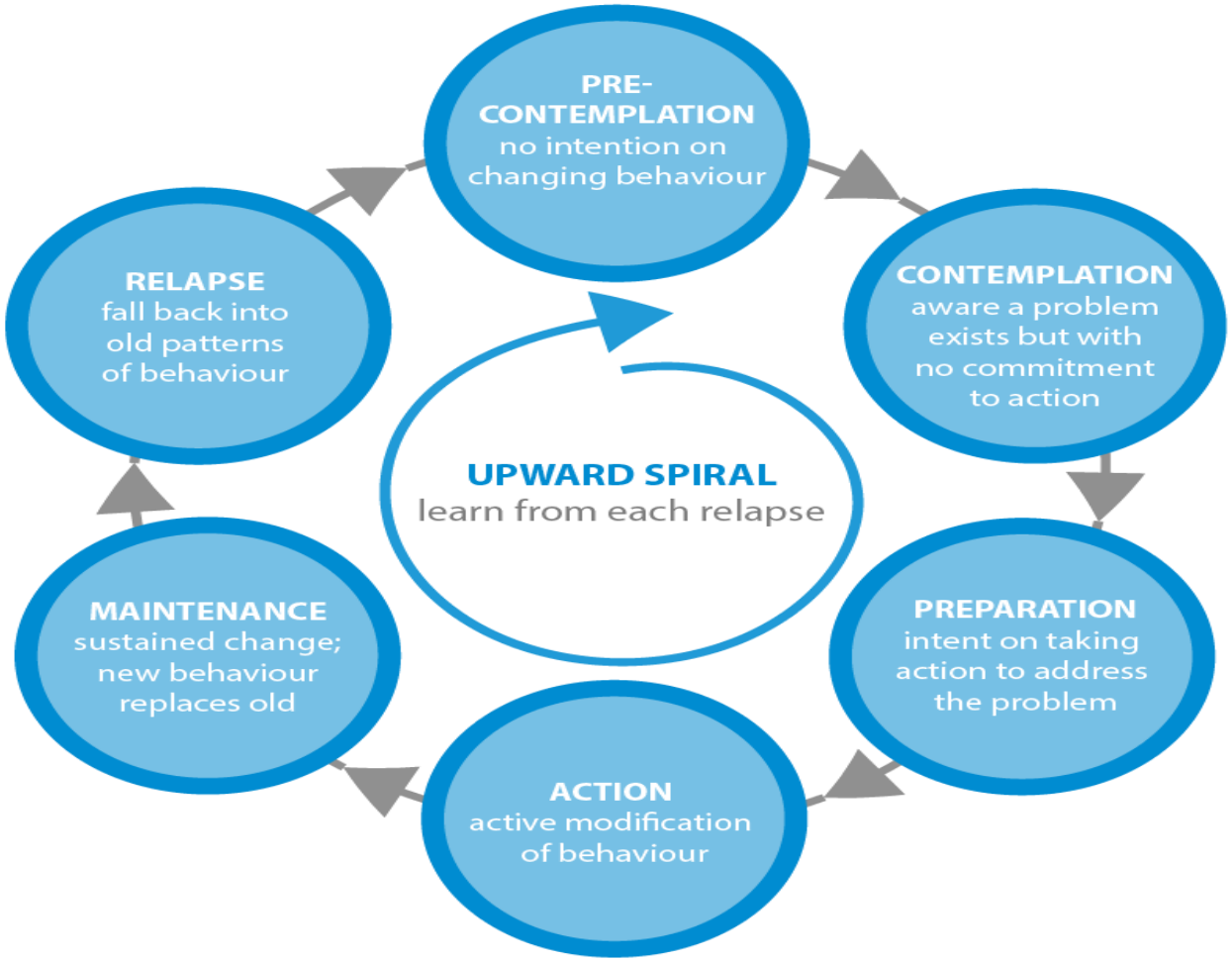
- Demographics (Age and Gender)
- Education and Income
- Exercise Experiences, Exercise History
- Physical Condition
- Knowledge About Exercise

Psychological Theory related to Adherence

- Exercise and The Theory of Reasoned Action/Planned Behavior.
- Self-Efficacy and Social Cognitive Theory.
- Self determination theory .
- The Perception of Benefits and Barriers to Exercise Adherence.
- Perceived Social Influence Factors such as Peer and Family.

- The Stages of Change

STAGES OF CHANGE



Key psychological factors in older adult uptake and adherence.

- Attitudes and beliefs
- Intentions
- Motivation
- Perception of competence
- Group cohesion
- Self efficacy and self confidence
- Feeling of achievement
- Goale setting

Activity Preference and Enjoyment of the Program.

Fun and Group

11 Fun Ways Older Adults Can Get started to exercise

- Take up dancing.
- Become a Zen master.
- Hit the links
- Go for a swim
- Garden on your patio
- Go window shopping.
- Weight-train with groceries
- Dust off the bike
- Make child's play of exercise.
- Try a Wii.


سپاس از حسن توجه شما


بسم الله الرحمن الرحیم


دانشکده تربیت بدنی و علوم ورزشی

دانشگاه خوارزمی

هفته پژوهش و فناوری

سمپوزیوم

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دکتر امیر لطافت کار

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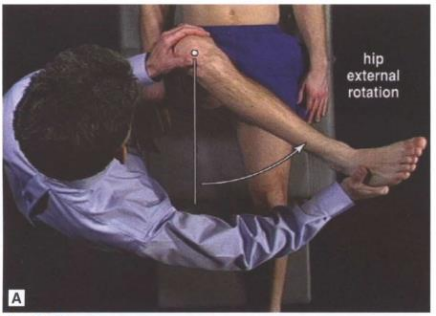


Fig. 3–23

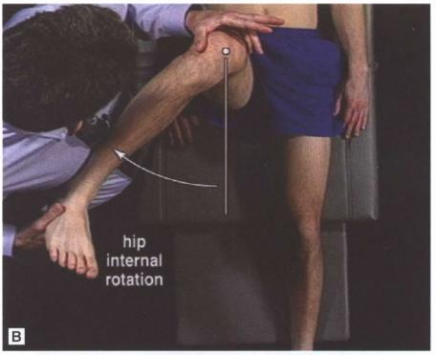
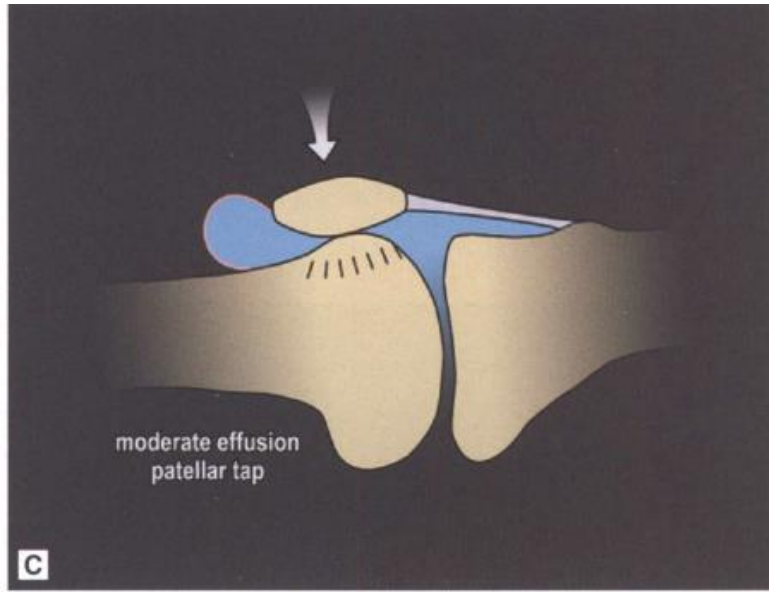
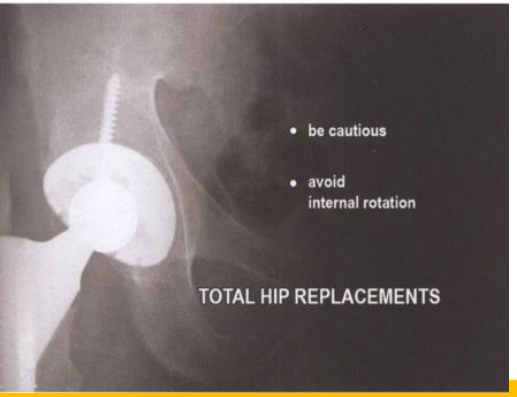


Fig. 3–23

Fig. 3–33

Fig. 3–33





Movement is physiology, biomechanics, psychology, and even sociology. Movement is life.

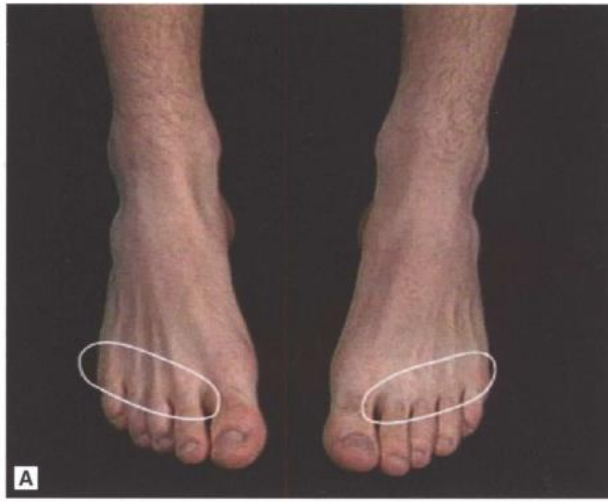


Fig. 3–41

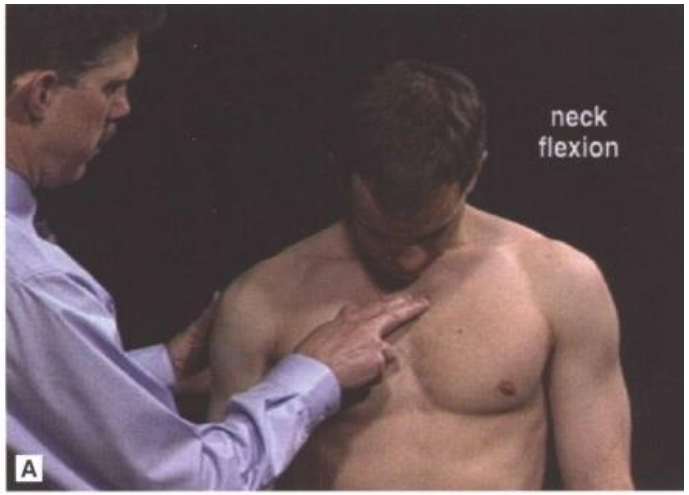
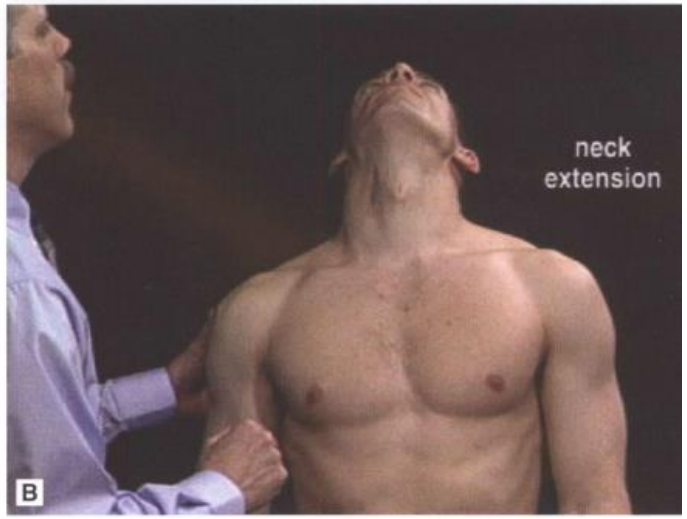


Fig. 3–44



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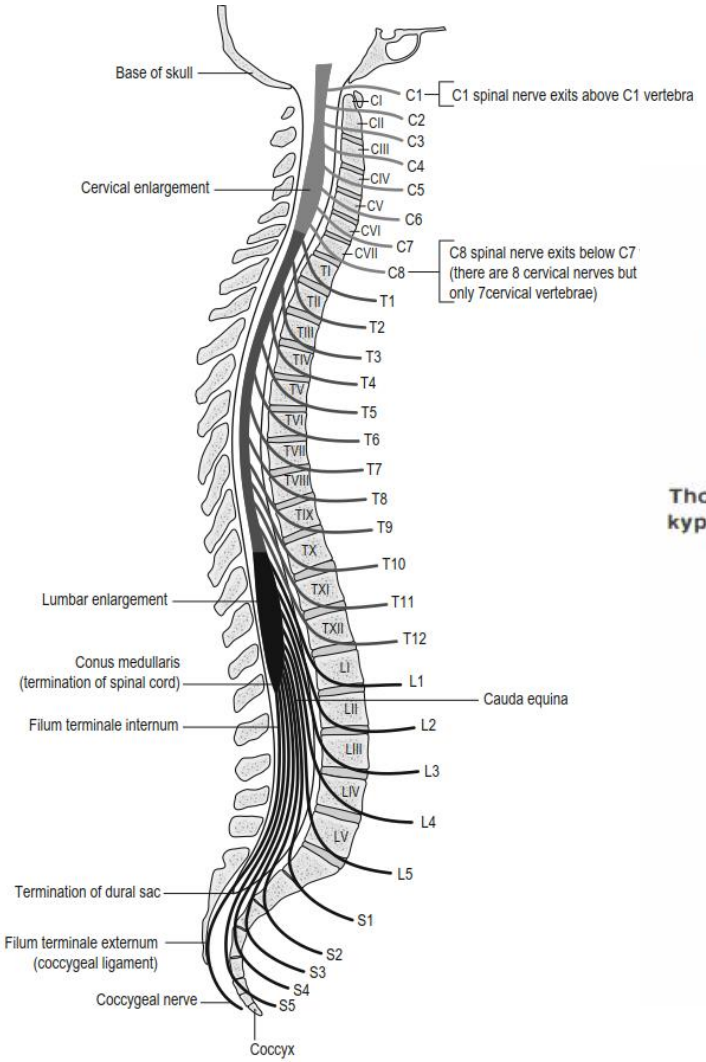
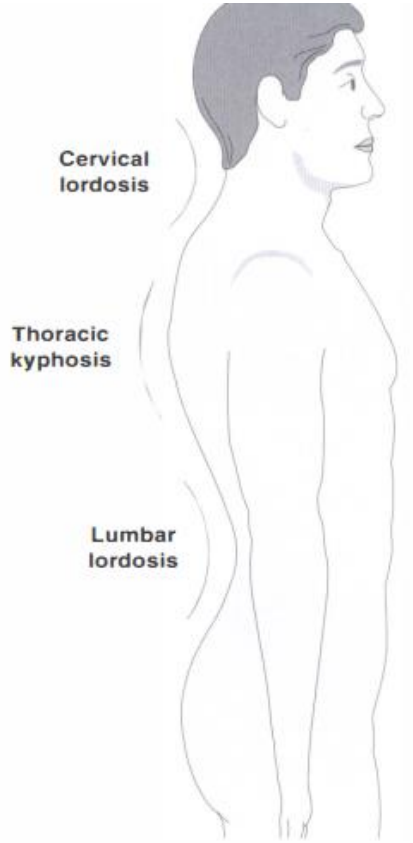
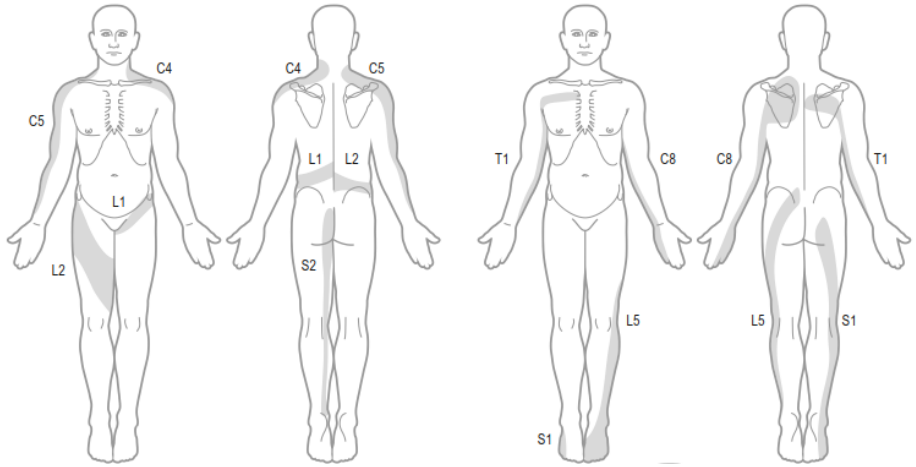
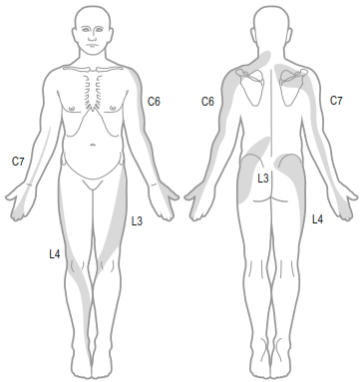
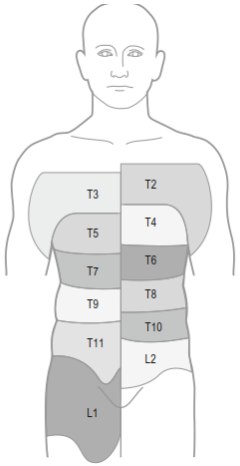










Movement is physiology, biomechanics, psychology, and even sociology. Movement is life.

Compensatory mechanisms, including a **decrease in thoracic kyphosis, posterior tilting or rotation of the pelvis, hip extension**, = preserving the appropriate position of the gravity line and horizontal gaze

Movement is physiology, biomechanics, psychology, and even sociology. Movement is life.

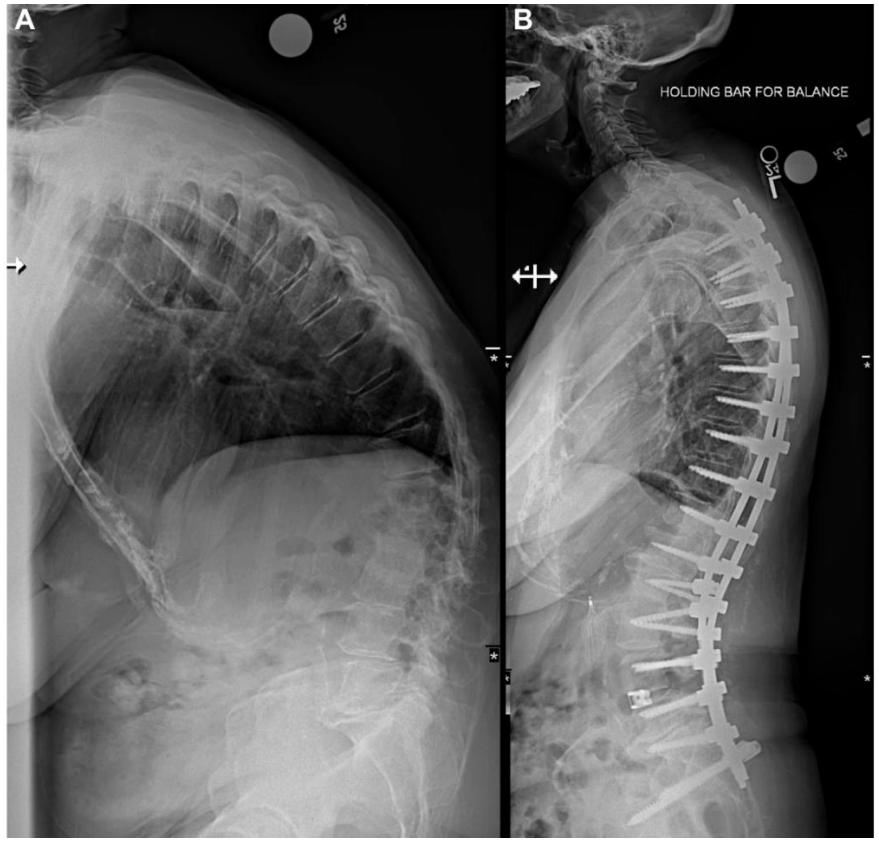
- Sagittal alignment is important to quality of life (QOL) in elderly people.
- Sagittal malalignment leads to back pain, gait disturbance, fatigue, and gastrointestinal symptoms.

- **Osteoporotic vertebral fractures** 27.1% and 53.0% in female patients in their 70 s and those aged ≥ 80 years, respectively.

- **lower lumbar disc degenerationis**.

Movement is physiology, biomechanics, psychology, and even sociology. Movement is life.

Fig 3.18 • Poorly aligned head control in the adult.



- Hyperkyphosis in isolation or as a component of degenerative kyphoscoliosis has important implication for the surgical management of adult spinal deformity

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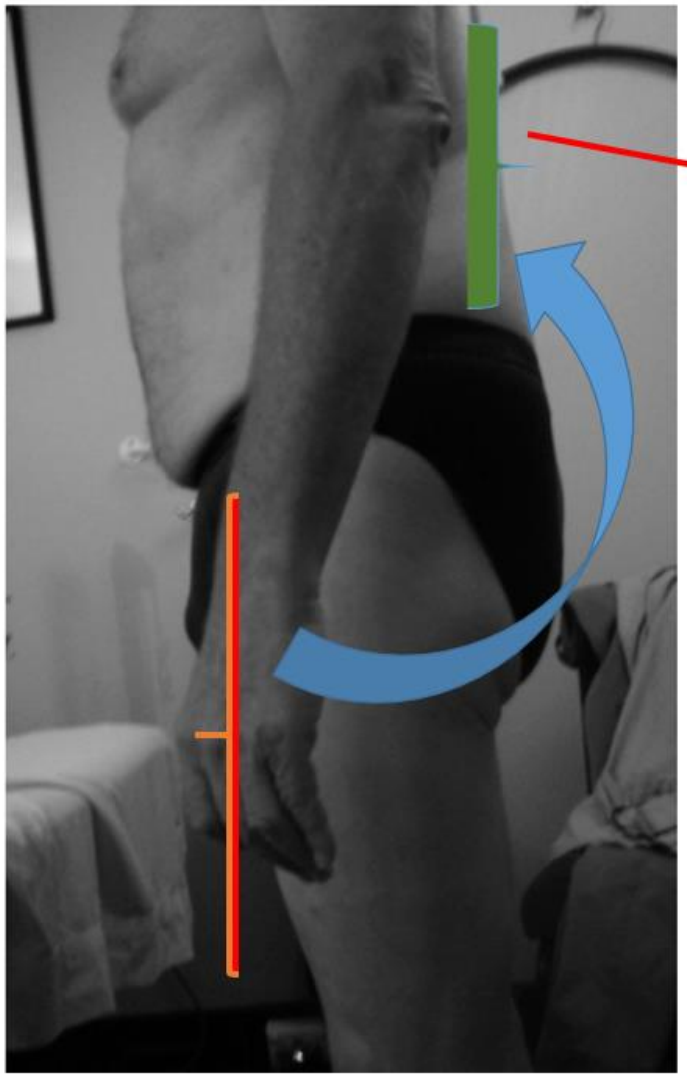

ld title

In conclusion, this study investigated the relationship between muscle strength and compensatory mechanisms. Back muscle, hip flexor, and knee extensor strength was associated with sagittal spinal alignment. Back muscle strength was important to decrease TK, and knee extensor strength was associated with PT.

Abnormal pelvic tilt = walking disability

Movement is physiology, biomechanics, psychology, and even sociology. Movement is life.

Examining probable contributions towards dysfunctional posture and movement

Carrying

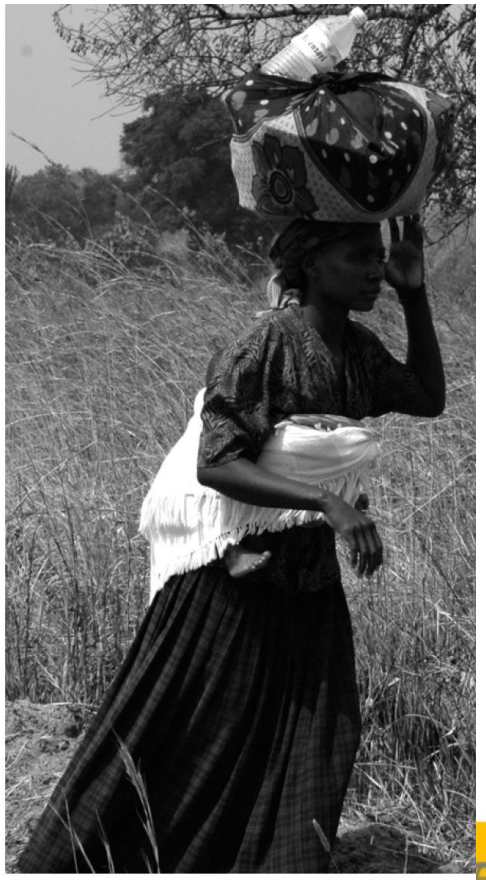

Fig 11.1 • Despite carrying two loads and hurrying she is graceful and relaxed!

Fig 11.2 • Despite considerable vertical loading she is smiling!

Lifestyle

Cultural trends

Sitting

Trauma

Psychosocial and emotional factors

Fashion

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Sport and recreation: 'stretching', 'Pilates' and yoga

Study of Hyperkyphosis, Exercise and Function (SHEAF) Protocol of a Randomized Controlled Trial of Multimodal Spine-Strengthening Exercise in Older Adults With Hyperkyphosis

Wendy B. Katzman, Eric Vittinghoff, Deborah M. Kado, Anne L. Schafer, Shirley S. Wong, Amy Gladin, Nancy E. Lane

TABLE 1 Evidence-Based Treatment Interventions

Procedure	Dosage	Goal
Strengthening		
Prone trunk lift to neutral	3 sets of 8 repetitions (0-to 2.3-kg dumbbells or wrist cuff weights); progress from arms by side, to arms in "W" position, to fists by ears	Strengthen spinal extensors,[27] strengthen middle and lower trapezius[36]
Prone trunk lift to neutral with weighted backpack (**FIGURE 4**)	1 set of 10 repetitions; 5 times per wk; 30% of 1-repetition maximum weight in backpack	Strengthen spinal extensors[27,50]
Quadruped alternate arm/leg lift	3 sets of 8 repetitions (0- to 2.3-kg wrist and thigh cuff weights)	Strengthen spinal extensors, scapula and trunk stabilization, reduce anterior tightness[18,36]
Ankle plantar flexion with resistance bands	3 sets of 8 repetitions	Increase ankle strength[2]
Stretching/mobility		
Chest stretching and diaphragmatic breathing on foam roller	60 s	Lengthen pectoralis muscles, expand ribcage[2,38]
Prone hip extension/knee flexion	Passive 30-s hold	Lengthen iliopsoas and rectus femoris[2]
Supine knee extension with hip at 90° flexion	Passive 30-s hold	Lengthen hamstrings[2]
Sidelying thoracic rotation	3 sets of 8 repetitions, progress to resistance bands to combine mobility and strength	Thoracic extension range of motion, strengthen spinal extensors and rotators[22]
Alternating shoulder flexion with diaphragmatic breathing on foam roller	Repeat 10-30 times	Mobilize thoracic spine[22]
Postural alignment		
Postural correction	Performed throughout the day sitting or standing; arms by side or hands behind head and retract scapula; practice standing alignment visualizing lengthening through the crown of the head with sternum lifted	Improve spinal proprioception[3,36,48,55] and postural alignment
Neutral spine sit to stand	Performed throughout the day	Integrate neutral spine alignment into activities
Bracing		
Spinomed	Wear 2 h/d	Provides proprioceptive input to facilitate upright postural alignment and facilitates spinal extensor muscle activity[49]
Weighted spinal kyphosis orthosis (**FIGURE 5**)	Wear when ambulating	Provides proprioceptive input to facilitate upright postural alignment[55,58]
Taping		
Apply therapeutic tape from the acromioclavicular joint diagonally across trapezius to T6 bilaterally (**FIGURE 6**)	Tape can be applied for wear during exercise (skin prep necessary)	Passive support from the tape[59]

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TABLE 2 Postural Alignment During Exercise and Activities of Daily Living

Dos	Don'ts
Maintain good postural alignment during exercise	Avoid seated rowing machines or upper body ergometers
Strengthen core stabilizer muscles, such as transversus abdominus, obliques, and multifidus	Avoid crunches, curl-ups, or flexed position (traditional sit-ups)
When bending or lifting objects, keep the spine in neutral, and bend at the hips and knees (hip hinge); keep objects close to the body	Don't twist or bend your spine when lifting objects
When getting out of bed, roll onto the side before sitting up (log roll)	Don't sit straight up from a horizontal position
When coughing or sneezing, stabilize trunk in neutral by hugging a pillow, or placing hands on knees while hip hinging, or place hand in small of back to help keep back in neutral	Avoid forceful trunk flexion while coughing or sneezing
Maintain the natural curves in your neck and back while sitting and standing. Imagine that you are lengthening through the crown of your head	Avoid leaning over towards your work, or standing in a pelvic tilt
Adjust height of the walker and walk within the frame when ambulating	Don't bend to reach, or push walker

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FIGURE 4. Prone trunk lift with weighted backpack. (A) Patient lies prone over a pillow, wearing a backpack secured to the upper back. (B) Squeeze shoulder blades together, tighten gluteal muscles and lift chest off the mat, keeping cervical and lumbar spine in neutral. (C) Begin with 1 set of 10 repetitions and progress with weights in backpack, up to a maximum weight of 30% of 1-repetition maximum.[27] In lieu of a weighted backpack, patients can use handheld dumbbells and perform the exercise with their elbows bent and their hands by their ears. Progress the dumbbells to 2.27 kg in each hand, and perform 3 sets of 8 repetitions.[36]

FIGURE 5. Weighted spinal kyphosis orthosis.[35] (A) Place the weighted kyphosis orthosis over the thoracic spine and adjust the straps such that the bottom of the pouch is located at the waistline. (B) Begin with a 115-g weight in the orthosis, and progress to a 225-g weight to provide sensory feedback to improve postural alignment. (C) Instruct the patient to wear the device when ambulating.

FIGURE 6. Thoracic taping for hyperkyphosis. (A) Instruct the patient to stand and elongate the crown of the head towards the ceiling. (B) Apply cover roll as needed to protect the skin. (C) Apply therapeutic tape from the anterior aspect of acromioclavicular joint, over the muscle bulk of the upper trapezius, and diagonally over the spinous process of T6. (D) Apply tape in this method bilaterally, intersecting the strips of tape at T6.

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Fig 13.100 • Utilizing the 'pelvic swing and shift patterns' during ADL.

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Fig 13.102 • Simply modifying usual activities helps gain functional mileage.

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Fig 13.103 • The focus is upon distal initiation through gentle pressure from either the underside heel or elbow. This facilitates a postural reflex response of axial lift and opening including the diaphragm. The focus is on expansion in the center and 'letting go' on each expiration; **not** hardening the outer muscles and/or pulling oneself back.

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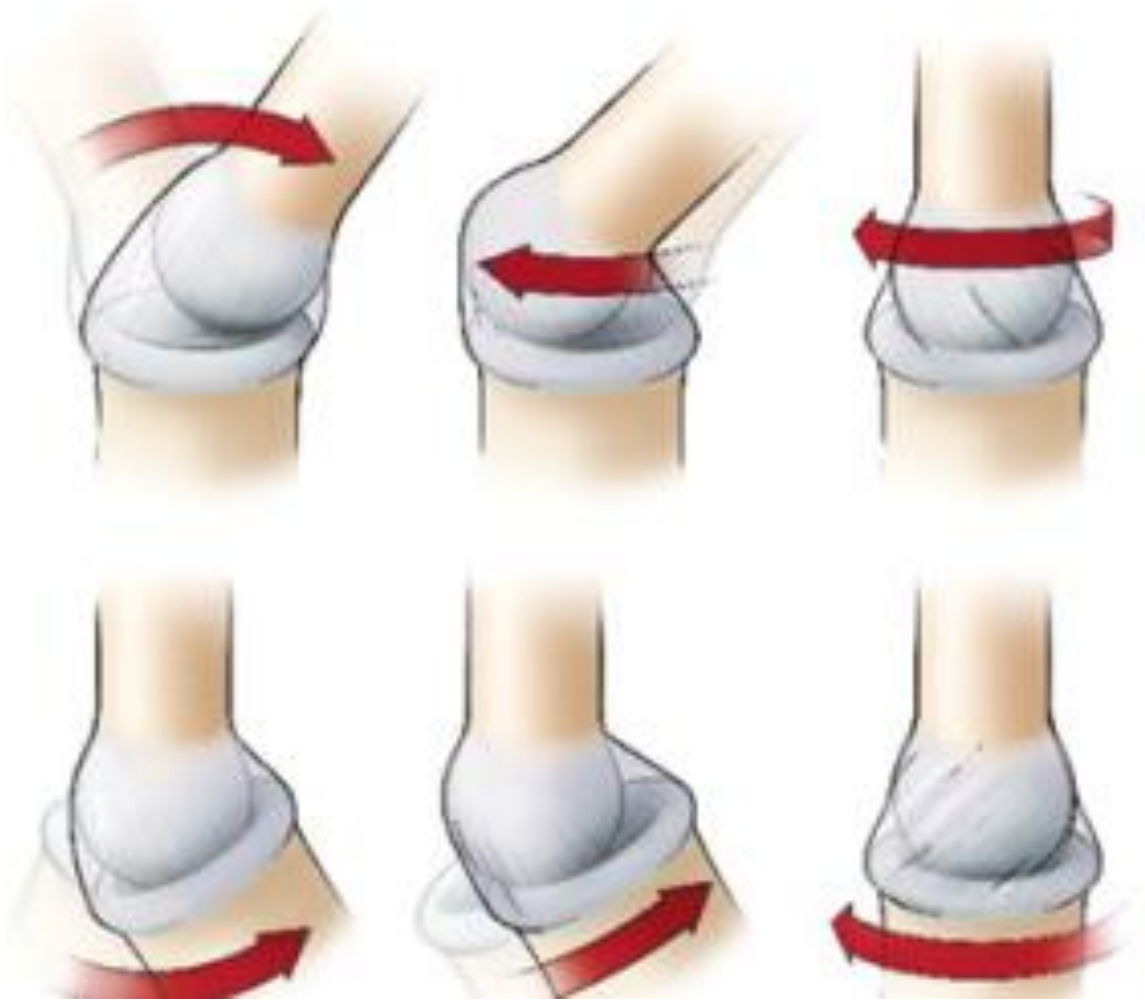

Fig 10.20 • Evident shortness anterior in the chest muscles contributes to a dome, limits freedom in the shoulder and creates compensatory movement in the cervical and lumbar spines.

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Unlocking the Shoulder

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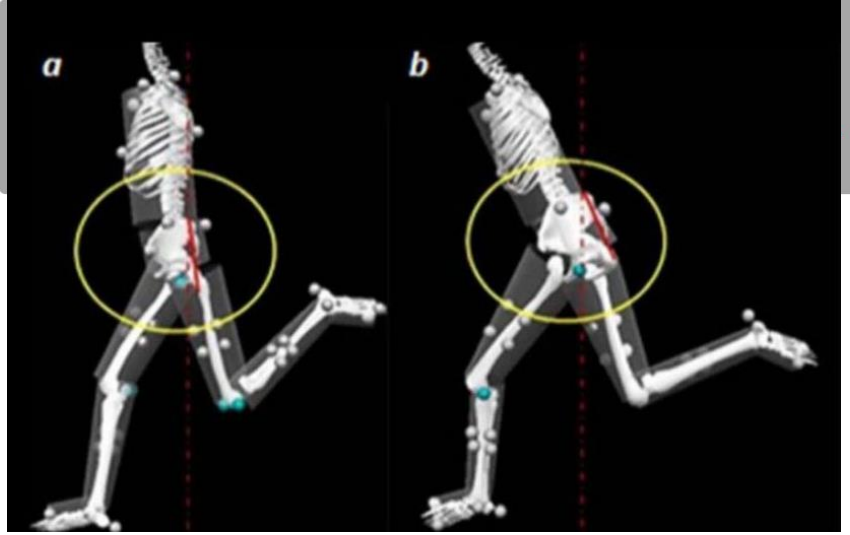

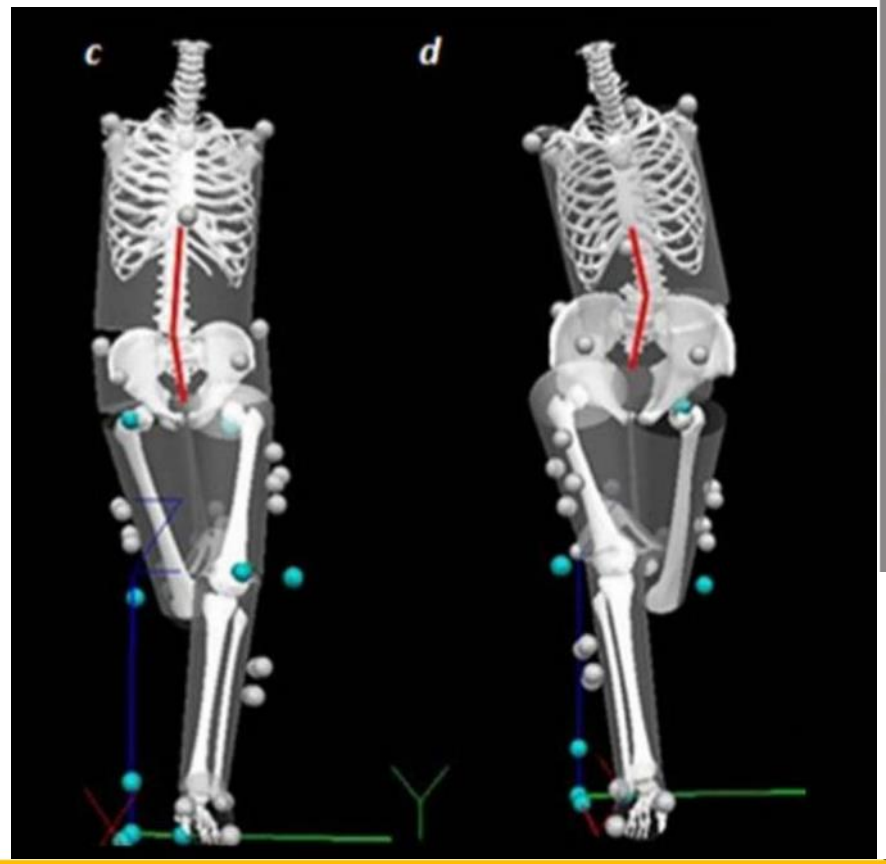

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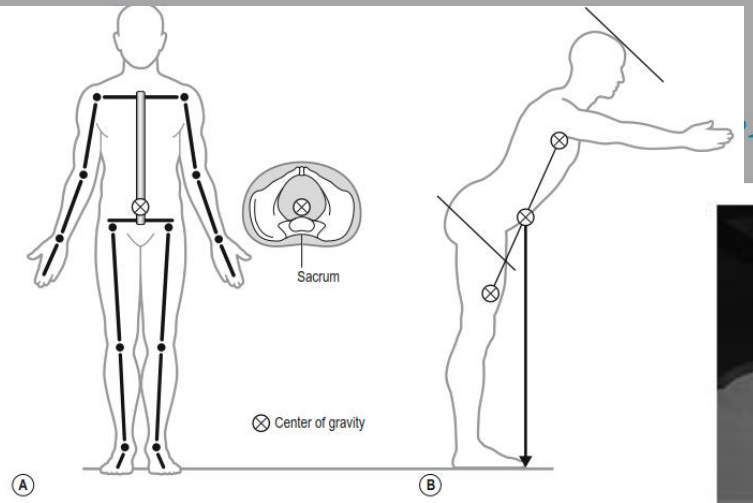

Fig 4.1 • The centre of gravity is mainly located within the body (A) but can deviate outside the body (B).

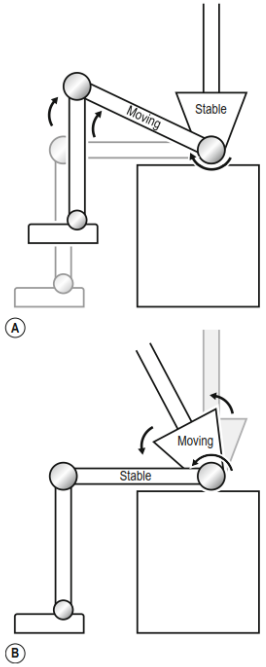

Fig 4.8 • Proximal stability with distal movement in (A) distal stability and proximal mobility in (B).

Fig 4.7 • Lack of flexion relaxation phenomenon in the thoracolumbar extensors.

Fig 4.5 • Inadequate pattern of axial stabilization.

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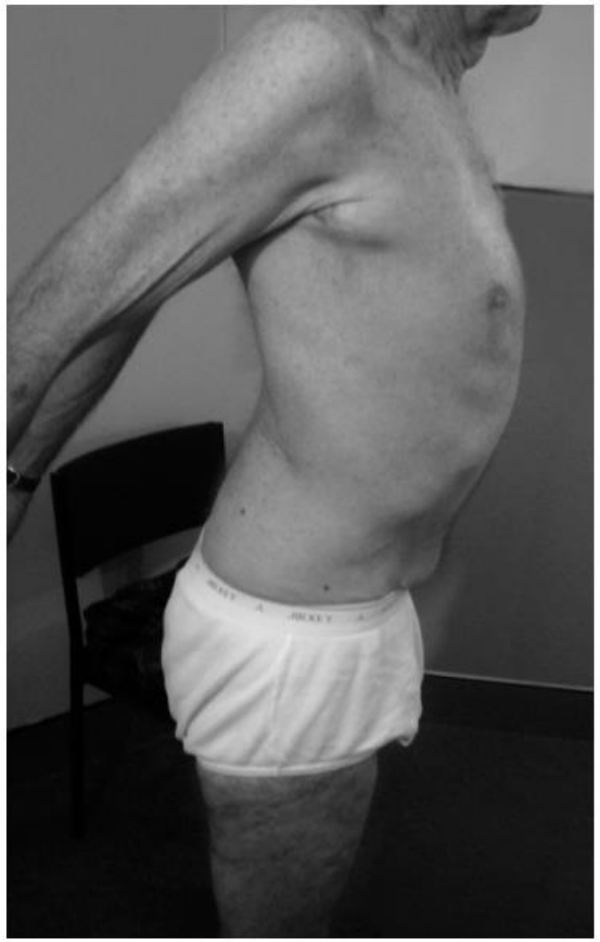

Fig 4.11 • Compensatory motion occurs in some regions of the spine when the thorax and shoulders are stiff.

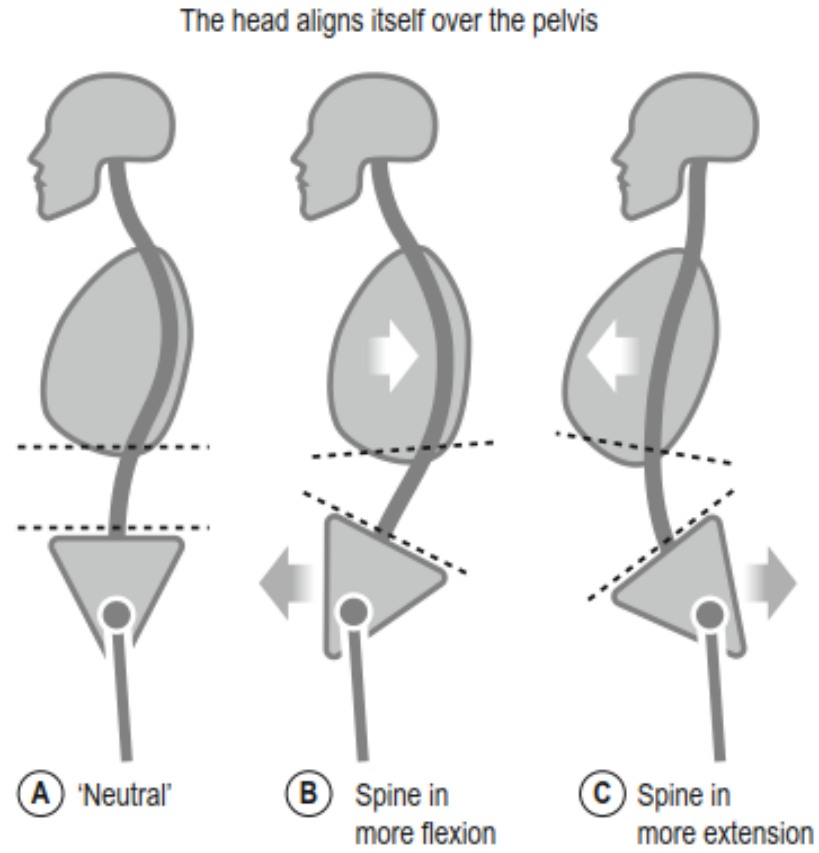

Fig 6.11 • Schematic play with altered alignment of the major body segments – the thorax and pelvis assume more oblique relationships (B) and (C).

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Fig 6.22 • Poor control of open chain hip flexion with posterior rotation of the whole pelvis and reduced frontal plane control.

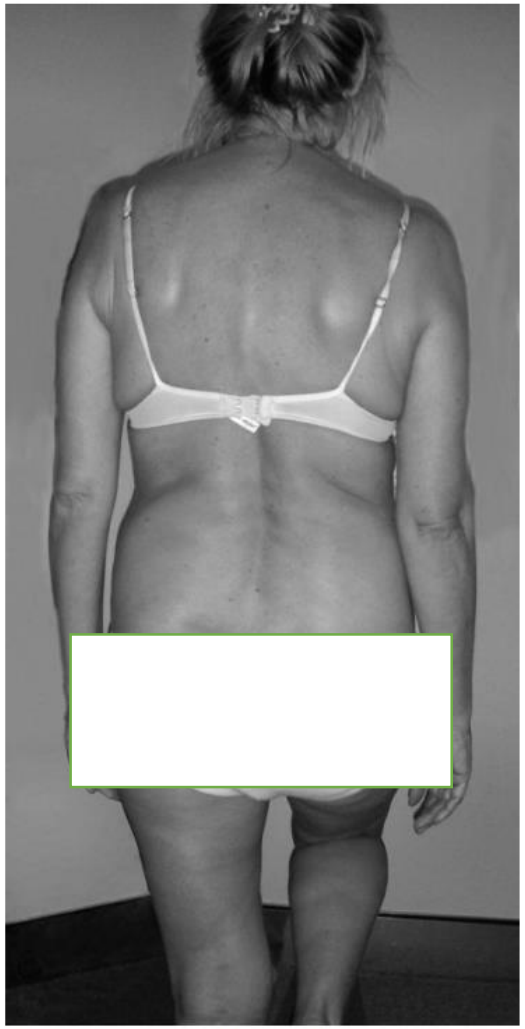

Fig 8.7 • Defective control of lateral weight transfer in standing becomes 'hanging' and 'holding'.

Fig 8.1 • Passive collapse in sitting creates eccentric loading in the spine

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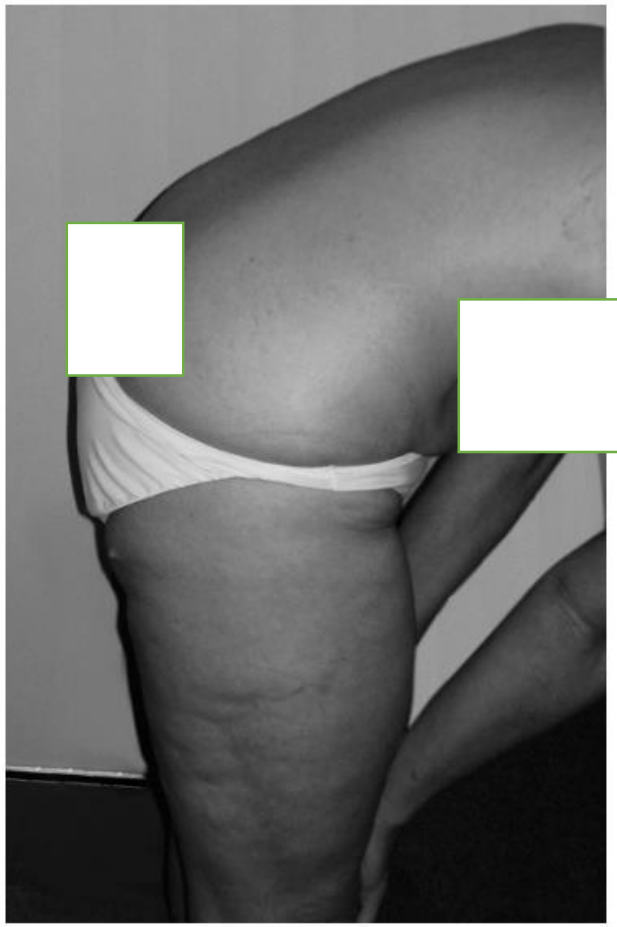

Fig 8.6 • Habitual poor forward bend pattern – note the use of the arms.

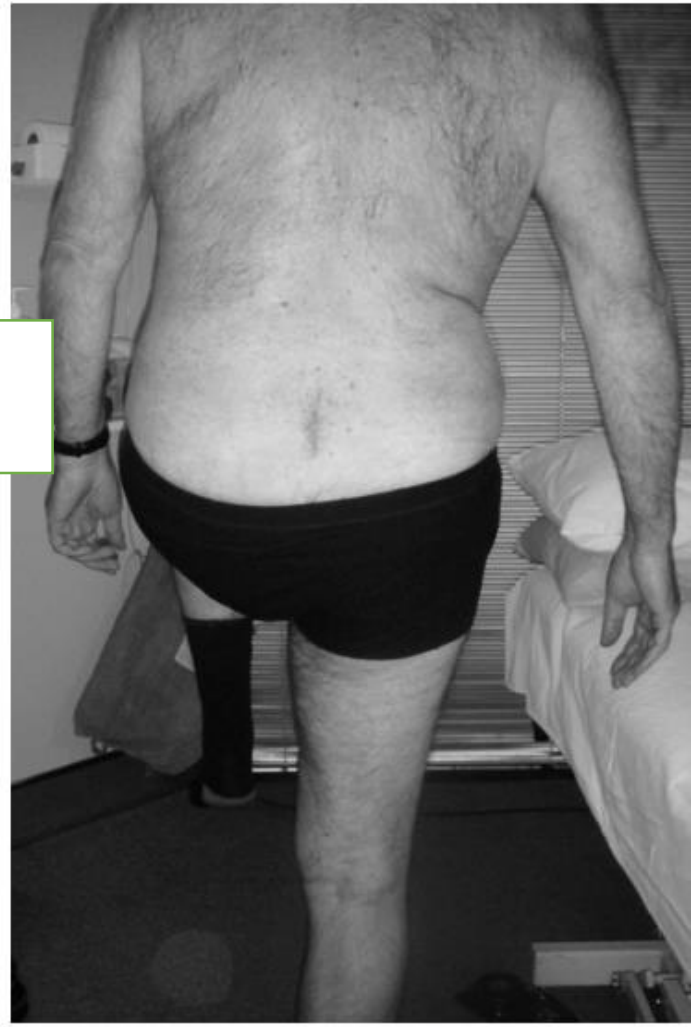

Fig 8.12 • Hip flexion also becomes lumbar flexion (side

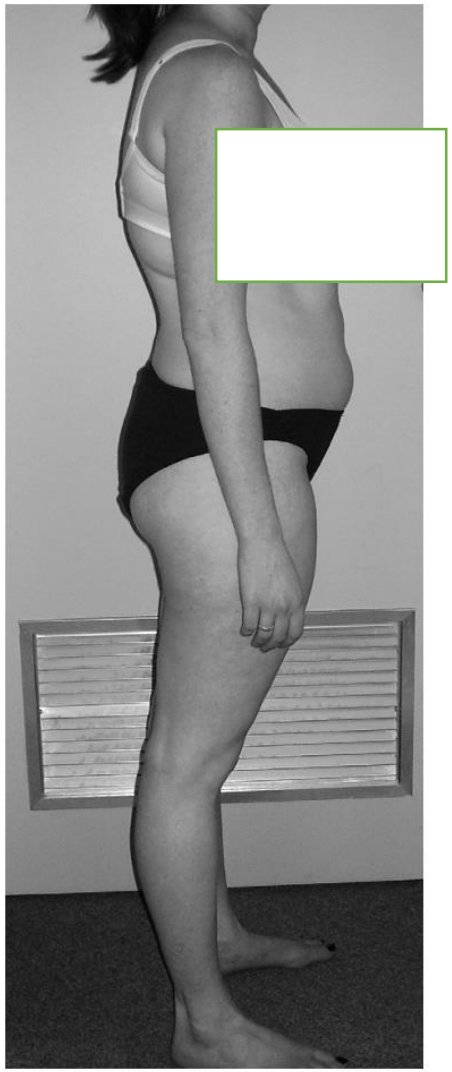

Fig 8.16 • Locking the legs and 'hanging'.

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Fig 13.9 • Soft tissue 'bubble' relating to marked 'hinging' stresses in function.

Fig 13.60 • The external rotators of the hip are tight. However this is not a reliable index on its own as range may appear better than it actually is when pelvic/hip myomechanics are more closely examined. Note here the asymmetry and puffiness over the low lumbar levels.

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Fig 13.65 • Prone hip extension/limb load ideally involves even activation of the extensors as shown.

Fig 13.64 • Deficient backward pelvic rotation. Note the poor contribution from the LPU and lack of co-activation in the abdominal wall.

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Unlocking the hips

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Unlocking hip int. Rotation

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Fig 8.24 • The patient has been asked to grow the right elbow to the ceiling to facilitate ipsilateral weight shift. Note poor spatial shift through the pelvis and reliance upon central posterior cinch behavior which stops ipsilateral lengthening in the torso. Note how she also compensates in the neck.

Fig 8.27 • Disability in frontal plane pelvic rotation limits lateral weight transfer through the pelvis and creates the need for compensations higher up. The patient is 21 years old and complaining of right sacroiliac joint pain.

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Fig 10.11 • Chronic lateral shift pattern. Note the associated buttock clenching and posterior cinch behavior.

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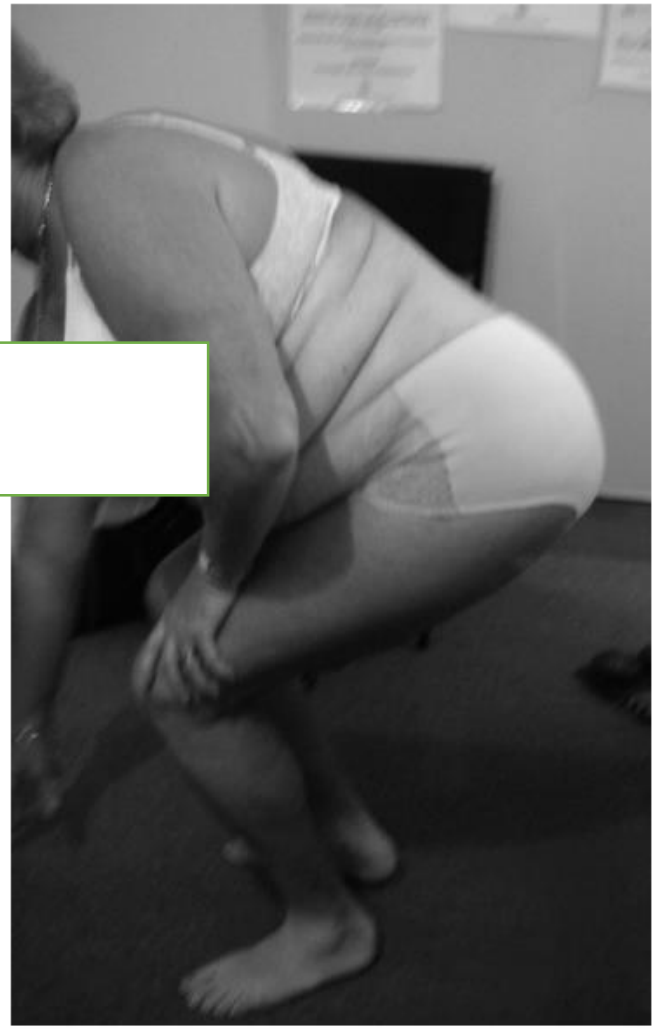

Fig 10.21 • Pushing down through the arms to come up is common when there is reduced dynamic control through the lower kinetic chain.

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Fig 10.3 • A central posterior cinch fixes the spine centrally limiting lateral weight shift. The subject is attempting to 'grow one elbow to the ceiling (see Ch. 13). Note the lack of adaptive eccentric lengthening in the (L) erector spinae and probably psoas and the poor weight shift through the pelvis.

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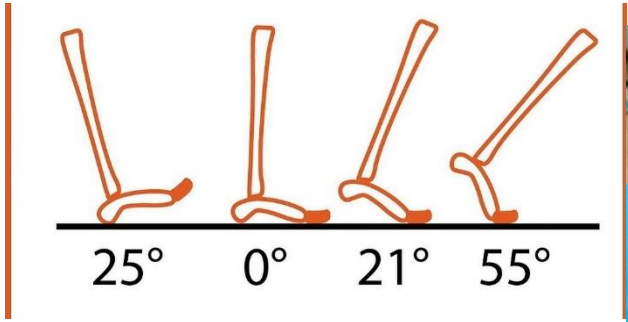

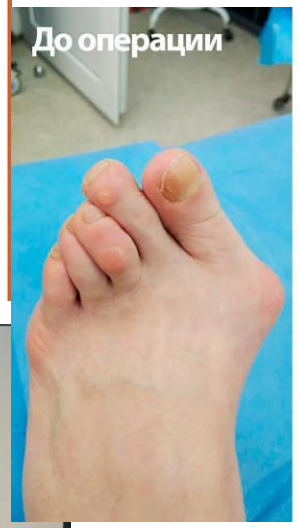

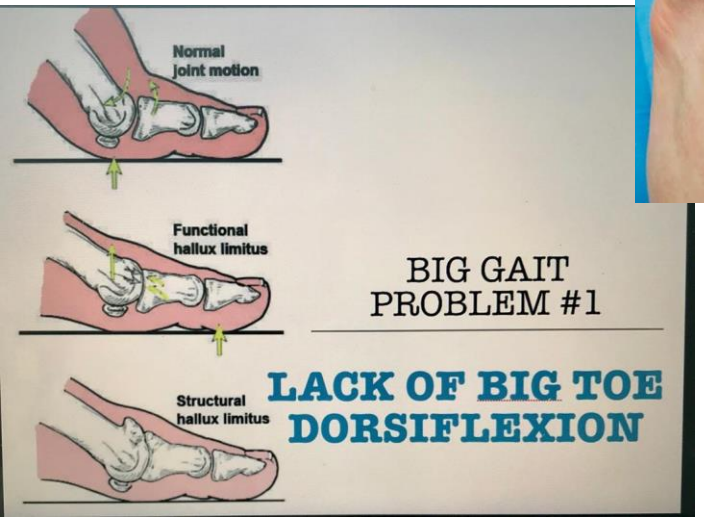

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Ankle Mobility

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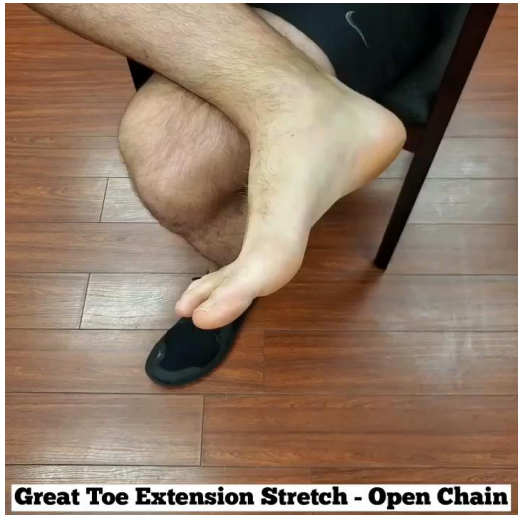
Great Toe Mobilization



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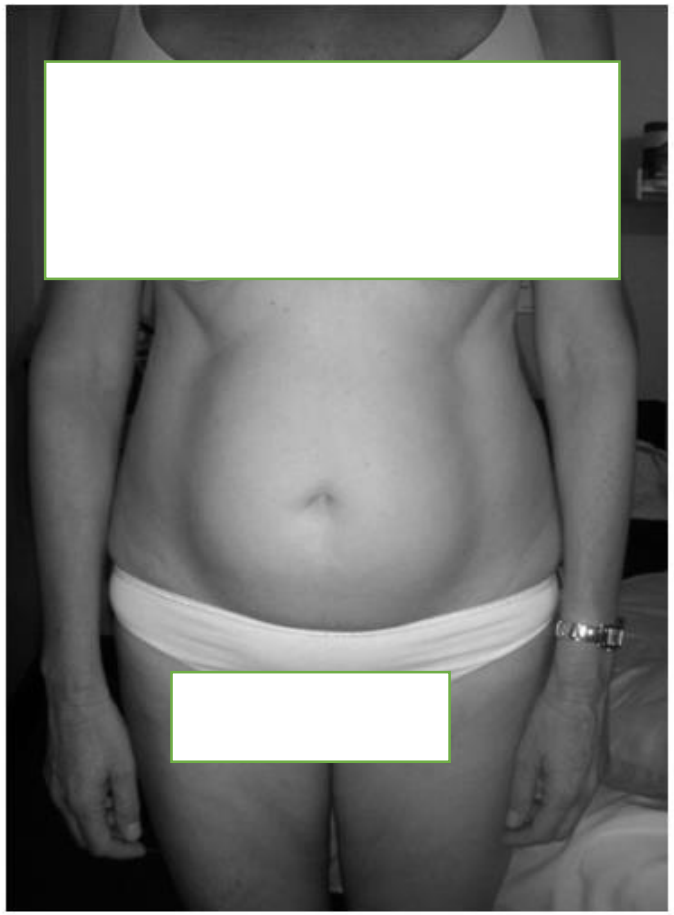

Fig 10.24 • The anterior Layer Syndrome is principally manifested by imbalance in the abdominal wall and increased activity in the anterior chest muscles.

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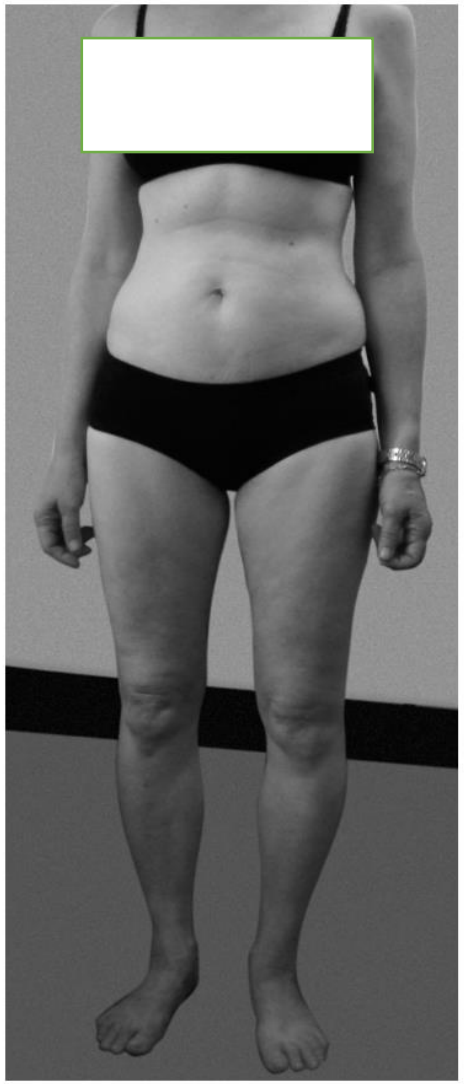

Fig 8.30 • Internal support and activity from the diaphragm is wanting.

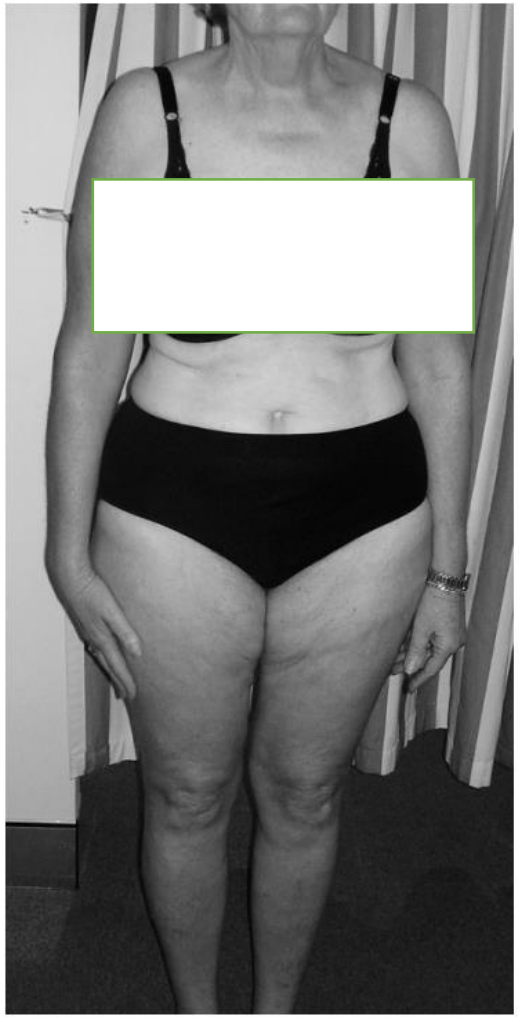

Fig 8.31 • Reduced activity in the diaphragm is associated with increased use of the accessory breathing muscles and neck tension and pain syndromes.

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Fig 8.32 • A thoracic kyphosis effects the alignment of the rest of the spine.

Fig 8.37 • Open lower anterior pole of the thorax.

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Breathing Exercises (aerobic, Yoga, Pilates, and …)

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Fig 8.21 • Posterior view of the Layer Syndrome in standing.

Fig 8.22 • Layer Syndrome in the prone patient. Even at rest, note dominant neuromuscular activity over the thoracolumbar region with 'emptiness' over the posterior proximal limb girdles.

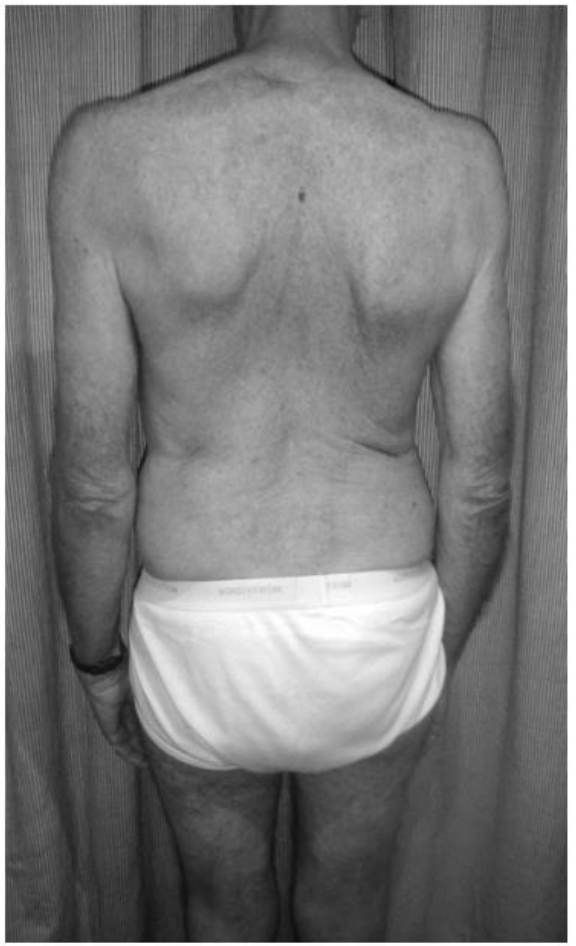

Fig 10.23 • Posterior Layer Syndrome where thoracolumbar extensors are prime.

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Fig 8.28 • Defective control of pelvic rotation in the sagittal and frontal planes again reduces weight shift through the pelvis and the need for 'holding strategies' higher up.

Fig 8.29 • The same patient in Fig. 8.1 & Fig. 8.10 has been asked to move her pelvis back in space in order to bend forward and instead she initially does what she 'knows' which is to bring it forward and into posterior tilt.

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Fig 9.15 • Chronic CAC: the thorax is pulled down anteriorly; note the inactivity in the lower abdominal wall, anteriorly shifted pelvis and wide base of support.

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Fig 9.22 • Basic pattern tendencies are carried forward into other actions (Fig. 9.20). 'Bending the knees' in forward bending often results in increased posterior pelvic rotation.

Fig 9.20 • Forward bend pattern relying upon 'hanging off the hamstrings' & the posterior axial 'passive system'.

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Glute Activation

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Fig 12.9 • Relying upon 'hanging from the hamstrings' & locking the 'ischial swing' in forward bending. This subject had been diagnosed as 'having a disc'. Intrathecal injections produced no ease. Observing 'his exercises' showed that he was reinforcing his problem (see Fig. 12.10).

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Inadequate organization and control of the forward bending pattern means that activities such as gardening produce 'gardener's back' instead of affording a positive 'physiological workout' for the body.

Fig 11.3 • Sprung! The subject 'thought she was bending properly'! There is inadequate release of the ischial swing from habitual holding (see Fig. 13.19). This is associated wit poor axial co-activation.

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Stupid stretches’ result and become a potent precipitating and perpetuating factor in **ongoing lumbopelvic pain syndromes**.

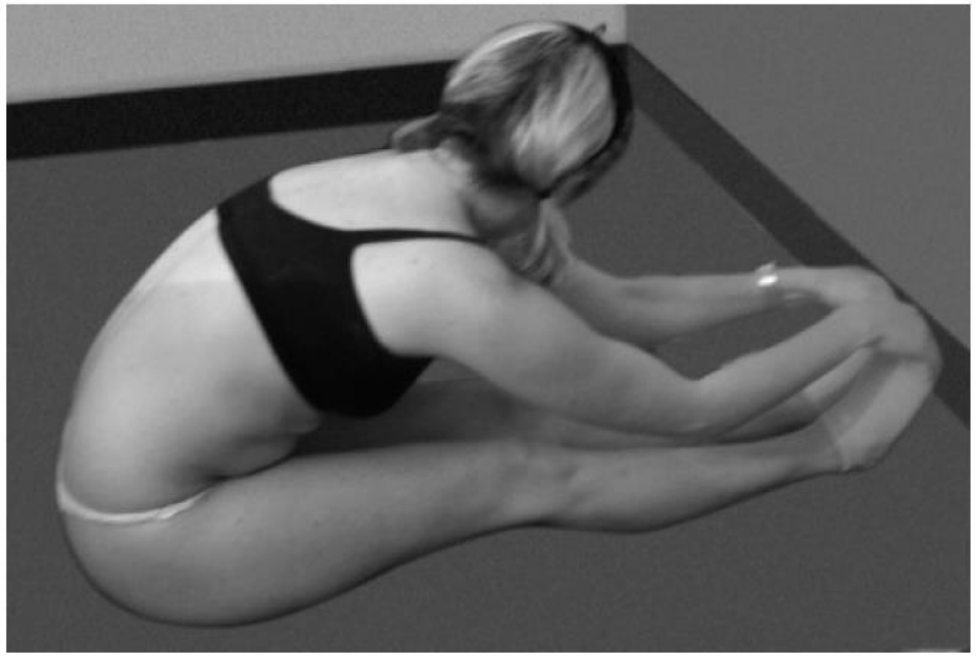

Fig 11.4 • Poor control of the pelvis and passivity in the stretch means that the low back is the structure receiving most of the stretch. It is the same subject in Fig. 8.26 who cannot weigh shift in sitting.

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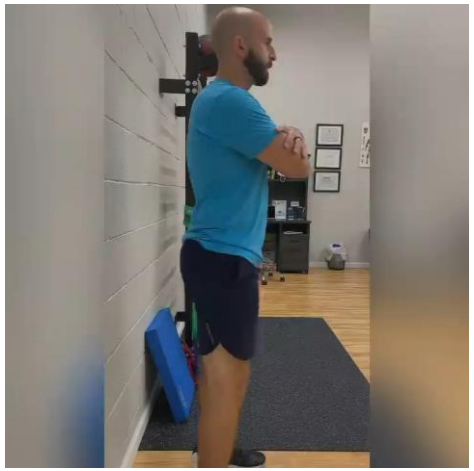
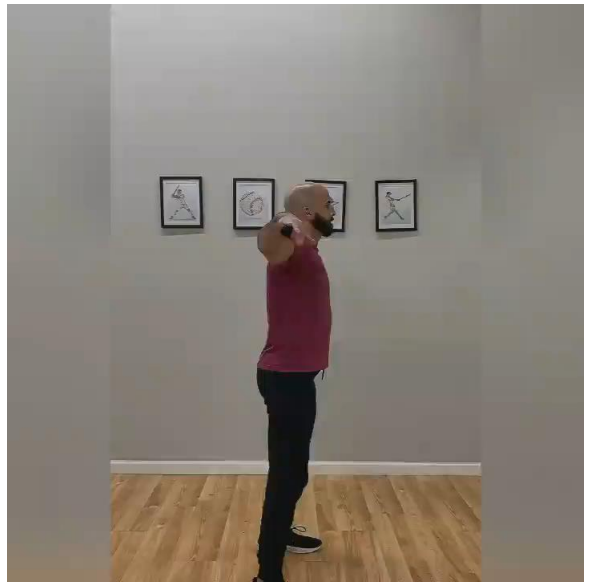
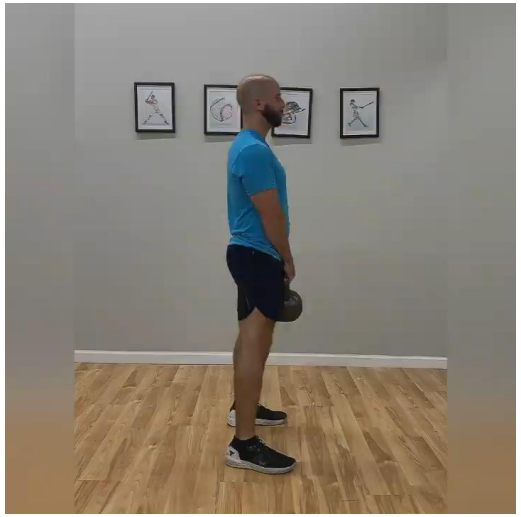
Hip Hinge Education







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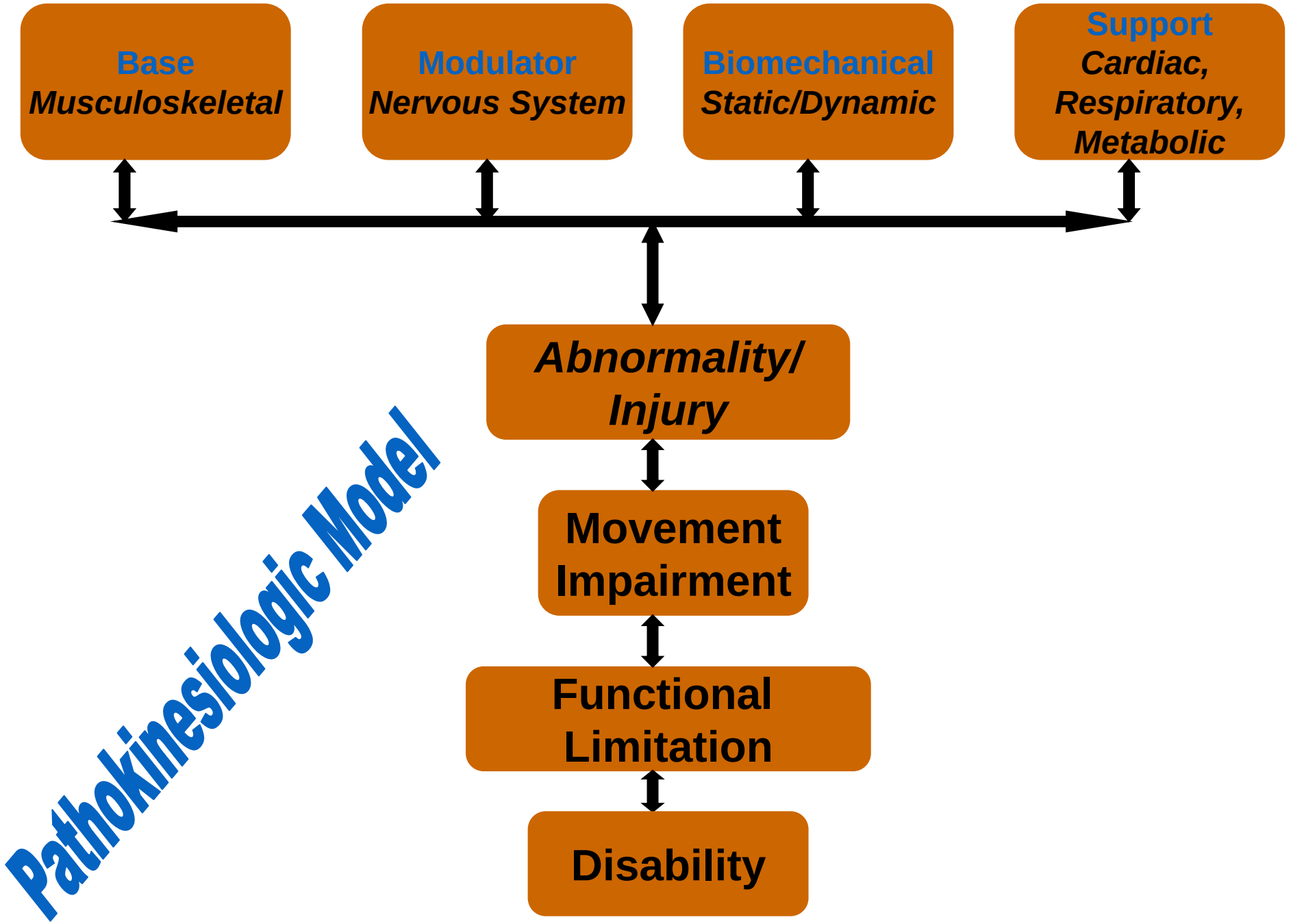
Base
Musculoskeletal
Modulator
Nervous System
Biomechanical
Static/Dynamic
Support
Cardiac,
Respiratory,
Metabolic
Abnormality/
Injury
Movement
Impairment
Functional
Limitation
Disability
Pathokinesiologic Model

Take-home messages

- **Exercise is medicine**
- **Pain-** cause of altered motor control.
- **Re-gain the joints arthrokinematics**.
- It’s never too late to start being active.
- Activity must become a priority and part of a daily routine.
- **Use it or lose it.** Muscles that are not used stop working effectively.
- **Take care- hypertension; osteoporosis; fractures; urinary incontinence.**
- **Only using the mixed interventions** (psychologic, postural, aerobic, and etc.)

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بسم الله الرحمن الرحیم


دانشکده تربیت بدنی و علوم ورزشی

دانشگاه خوارزمی

هفته پژوهش و فناوری

سمپوزیوم

ورزش سالمندی

دکتر سعید ارشم

عضو هیات علمی دانشگاه خوارزمی

ارتقاء عملکرد حرکتی سالمندان با برنامه OTAGO

فهرست

Physical Performance

اهداف اصلی مداخلات حرکتی برای سالمندان؟

- جلوگیری از افتادن
- ADLs موثر و مستقل

ویژگی های یک برنامه مداخله مناسب؟

- Evidence-based
- دربرگیرنده مولفه های اصلی حرکت
- به روشی قابل درک و ساده
- قابل اجرا در همه جا
- با کمترین هزینه

برنامه اوتاگو (Otago) چیست؟

۱) توسط جان کمپل و کلر رابرتسون (دانشگاه اوتاگو)
۲) برنامه ای برای جلوگیری از افتادن
۳) برای افزایش استقلال حرکتی
۴) تاکید بر مولفه های قدرت و تعادل
۵) انفرادی (و قابل اجرا به صورت گروهی)
۶) قابل اجرا در منزل
۷) بدون نیاز به امکانات خاص
۸) قابل نظارت هم توسط فیزیوتراپ و هم افراد عادی

پژوهش های زیادی تاثیر آن را نشان داده اند

Trial Results Summary and Lessons Learned

- The Otago Exercise Program can reduce falls and fall related injuries. The program was most effective for adults 80 years and older.
- Men and women benefited equally.
- Participants' strength and balance improved markedly as assessed by the Chair Stand and the Four-Stage Balance tests.
- While older adults with and without previous falls benefited equally, if resources are limited, first offer the Otago program to adults 80 years and older,[1] as Otago was shown to be particularly effective in reducing falls and injuries among individuals in that age group.

ویژگی های مهم این برنامه

	Strengthening	Balance Retraining	Walking
Assessment	30 Second Chair Stand Test[11]	Four-Stage Balance Test[12, 13]	Timed Up & Go[14-16]
Activity	Five leg muscle strengthening exercises Four levels of difficulty	Twelve balance retraining exercises Four levels of difficulty Not all exercises may be prescribed	Advice about walking (see *Walking Tips*)
Intensity	Moderate Challenge 8-10 repetitions before fatigue	Moderate Challenge Each exercise at a level that the patient can safely perform unsupervised	Usual pace with usual walking aid

ویژگی های مهم این برنامه – ادامه

Progressions	Increase from one to two sets Increase amount of ankle weight after 2 sets of 10	Supported exercise to unsupported exercise	Walk indoors Advance to walking outdoors when strength and balance have improved
Length of Exercise Sessions	Approximately thirty minutes total for exercises; Exercises can be divided up over the day		Thirty minutes; can be split into three ten-minute walks throughout the day
Frequency	Three times a week with rest day between	At least three times a week	At least twice a week
Duration	52 weeks		

ارزیابی پیشرفت برنامه (Assessment)

قدرت (۳۰ ثانیه صندلی)، تعادل (آزمون ۴ مرحله ای)، راه رفتن (آزمون Timed Up and Go)

Functional Assessments																				
Record Point	**Baseline**				**3 Months**				**6 Months**				**9 Months**				**12 Months**			
TUG Record to tenth of a second (0.0 seconds)																				
30 Second Chair Stand Record as number of raises																				
Four-Stage Balance Test Did patient hold each position for 10 seconds? Mark Yes(Y), No (N), or (X) in each box.	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

ارزیابی پیشرفت برنامه (Assessment)

30 Second Chair Stand Test Instructions	
Participant	**Physical Therapist**
1. Sit in the middle of the chair. 2. Place your hands on the opposite shoulder crossed at the wrists. 3. Keep your feet flat on the floor. 4. Keep your back straight. 5. On "Go," rise to a full standing position and then sit back down again. 6. Repeat this for 30 seconds.	1. Place the chair against a wall for safety. 2. On "Go," begin timing. 3. Count the number of times patient comes to a full standing position in 30 seconds. 4. If the patient is over halfway to a standing position when 30 seconds have elapsed, count it as a stand 5. A below average rating indicates a high risk for falls. 6. Record score on Otago Visit Sheet or in your medical documentation

ارزیابی پیشرفت برنامه (Assessment)

30 Second Chair Stand (# stands)[24]							
MEN				WOMEN			
Age	Below Average	Average	Above Average	Age	Below Average	Average	Above Average
60-64	<14	14-19	>19	60-64	<12	12-17	>17
65-69	<12	12-18	>18	65-69	<11	11-16	>16
70-74	<12	12-17	>17	70-74	<10	10-15	>15
75-79	<11	11-17	>17	75-79	<10	10-15	>15
80-84	<10	10-15	>15	80-84	<9	9-14	>14
85-89	<8	8-14	>14	85-89	<8	8-13	>13
90-94	<7	7-12	>12	90-94	<4	4-11	>11

ارزیابی پیشرفت برنامه

(Assessment)

Four-Stage Balance Test Instructions	
Participant	**Physical Therapist**
1. Stand in each position for 10 seconds. 2. You can hold your arms out or move your body to help keep your balance but do not move your feet. 3. Hold this position until you are told to stop.	1. For each stage, say "Ready, begin" and begin timing. 2. After 10 seconds, say "Stop."

Four-Stage Balance Test Stances			
Feet Together Stand	**Semi-Tandem Stand**	**Tandem Stand**	**One Leg Stand**
▪ Stand with your feet side by side.	▪ Place the instep of one foot so it is touching the big toe of the other foot.	▪ Place one foot in front of the other, heel touching toe.	▪ Stand on one foot.
			

Instructions to the Patient
When I say "GO", I want you to: 1. Stand up from the chair. 2. Walk to the line on the floor at your normal pace. 3. Turn. 4. Walk back to the chair at your normal pace. 5. Sit back down again.
Observe the patient's postural stability, gait, stride length, and sway. Circle all that apply: Slow tentative pace — Loss of Balance — Short strides — Little or no arm swing — Steadying self on walls — Shuffling — En bloc turning — Not using assistive device properly Notes:

On the word "Go" begin timing.

Stop timing after patient has sat back down and record.

Time: _____ seconds (#.#)

An older adult who takes ≥ 12 seconds to complete the TUG is at high risk for falling.

ارزیابی پیشرفت برنامه

(Assessment)

فعالیت های اصلی Otago

Otago Exercise Levels and Repetitions			
WARM-UP (FLEXIBILITY) EXERCISES			
Head Movements	Stand tall, 5 times on each side	Trunk Movements	Stand tall, 5 times each side
Neck Movements	Stand tall, 5 times	Ankle Movements	Stand or sit, 10 times
Back Extension	Stand tall, 5 times		
STRENGTHENING EXERCISES			
Knee Extensor	**ALL 4 LEVELS** Ankle weights are used to provide resistance; perform 10 repetitions of each exercise, when able to do 2 sets of 10 repetitions add/progress weights.		
Knee Flexor			
Hip Abductor			
Calf Raises	**LEVEL C** 10 repetitions, hold support, repeat	**LEVEL D** 10 repetitions, no support, repeat	
Toe Raises	10 repetitions, hold support, repeat	10 repetitions, no support, repeat	

فعالیت های اصلی Otago

BALANCE RETRAINING EXERCISES				
	LEVEL A	LEVEL B	LEVEL C	LEVEL D
Knee Bends	10 repetitions Hold support	10 repetitions No support *or* 10 repetitions Hold support, repeat	10 repetitions No support, repeat	10 repetitions, 3 times No support
Backwards Walking		10 steps, 4 times Hold support		10 steps, 4 times No support
Walking And Turning Around		Walk and turn around (do a figure 8) twice Use walking aid	Walk and turn around (do a figure 8) twice No support	
Sideways Walking		10 steps, 4 times Use walking aid	10 steps, 4 times No support	
Tandem Stance (Heel Toe Stand)	10 seconds Hold support	10 seconds No support		
Tandem Walk (Heel Toe Walk)			Walk 10 steps Hold support, repeat	Walk 10 steps No support, repeat
One Leg Stand		10 seconds, Hold support	10 seconds, No hold	30 seconds, No hold
Heel Walking			10 steps, 4 times Hold support	10 steps, 4 times No support
Toe Walk			10 steps, 4 times Hold support	10 steps, 4 times No support
Heel Toe Walking Backwards				Walk 10 steps No support, repeat
Sit To Stand	5 stands, 2 hands for support	5 stands, 1 hand *or* 10 stands, 2 hands for support	10 stands, no support *or* 10 stands, 1 hand for support, repeat	10 stands No support, repeat
Stair Walking	As instructed	As instructed	As instructed	As instructed, repeat

گرم کردن

Head Movements

- Stand up tall and look ahead.
- Slowly turn your head as far as you can to the right.
- Slowly turn your head as far as you can to the left.
- Repeat five times to each side.

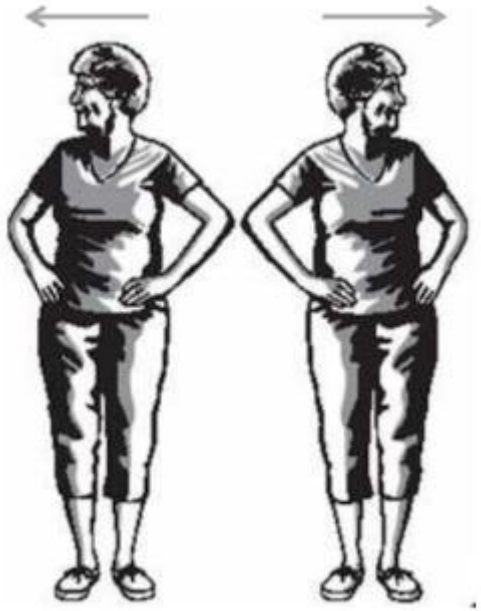
Neck Movements

- Stand up tall and look ahead.
- Place one hand on your chin.
- Guide your head straight back.
- Repeat five times.

گرم کردن

Back Extension

- Stand up tall with feet shoulder-width apart.
- Place your hands on the small of your back.
- Gently arch your back.
- Repeat five times.



Trunk Movements

- Stand up tall and place your hands on your hips.
- Do not move your hips.
- Turn as far as you can to the right, comfortably.
- Turn as far as you can to the left, comfortably.
- Repeat five times to each side.

Ankle Movements

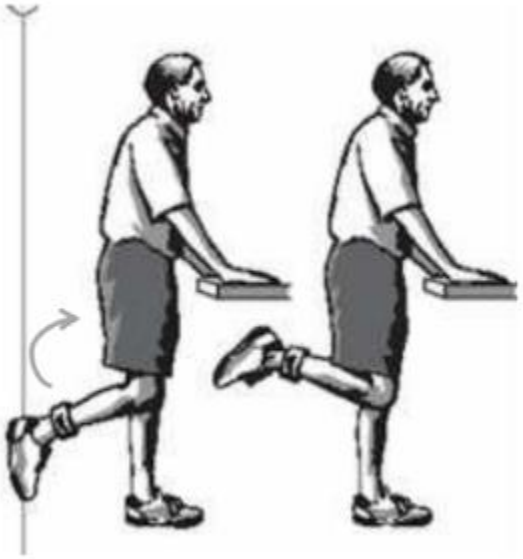
- Either stand or sit.
- Pull the foot towards you, then point the foot down.
- Repeat 10 times for each foot.

تمرینات قدرتی

حداقل ۳ بار در هفته

Front Knee Strengthening Exercise

- Strap the weight onto your ankle.
- Sit in a chair with your back well supported.
- Straighten the leg out.
- Lower the leg.
- Repeat 10 times.
- Strap the weight onto your other ankle.
- Repeat this exercise 10 times.



Back Knee Strengthening Exercise

- Strap the weight onto your ankle.
- Stand up tall facing a table with both hands on the table.
- Bend the knee, bringing the foot toward your bottom.
- Return to the starting position.
- Repeat 10 times.
- Strap the weight onto your other ankle.
- Repeat this exercise 10 times.

Side Hip Strengthening Exercise

- Strap the weight onto your ankle.
- Stand up tall beside a table and hold onto it.
- Keep the exercising leg straight and the foot facing straight ahead.
- Lift the leg out to the side and return.
- Repeat 10 times.
- Strap the weight onto your other ankle.
- Turn around.
- Repeat this exercise 10 times.

Calf Raises – Hold Support

- Stand up tall facing a table.
- Hold onto the table and look ahead.
- Your feet should be shoulder-width apart.
- Come up onto your toes.
- Lower your heels to the ground.
- Repeat this exercise 10 times.

Calf Raises – No Support

- Stand up tall near a table and look ahead.
- Your feet should be shoulder-width apart.
- Come up onto your toes.
- Lower your heels to the ground.
- Repeat this exercise 10 times.

Toe Raises – Hold Support

- Stand up tall beside a table.
- Hold on and look ahead.
- Your feet should be shoulder-width apart.
- Come back onto your heels, raising your front foot off the floor.
- Lower your feet onto the ground.
- Repeat this exercise 10 times.

Toe Raises – No Support

- Stand up tall near a table and look ahead.
- Your feet should be shoulder-width apart.
- Come back onto your heels, raising your front foot off the floor.
- Lower your feet to the ground.
- Repeat this exercise 10 times.

تمرینات تعادل

حداقل ۳ بار در هفته

Knee Bends – Hold Support

- Stand up tall facing a table with both hands on the table.
- Place your feet shoulder-width apart.
- Squat down half way, bending your knees.
- The knees go over the toes.
- When you feel your heels start to lift, straighten up.
- Repeat ___ time(s).

Knee Bends – No Support

- Stand up tall near a table and look ahead.
- Place your feet shoulder-width apart.
- Squat down half way, bending your knees.
- The knees go over the toes.
- When you feel your heels start to lift, straighten up.
- Repeat ___ time(s).

Backwards Walking – Hold Support

- Stand up tall and hold onto a table.
- Walk backwards 10 steps.
- Turn around and hold on with the other hand.
- Walk backwards 10 steps to the beginning.
- Repeat this exercise.

Backwards Walking – No Support

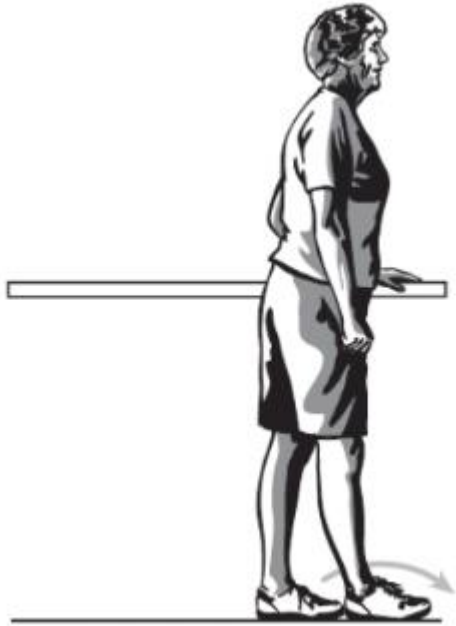
- Stand up tall near a table and look ahead.
- Walk backwards for 10 steps.
- Turn around.
- Walk backwards 10 steps to the beginning.
- Repeat.

Walking and Turning Around

- Stand near a table.
- Walk at your regular pace.
- Turn in a clockwise direction.
- Walk back to your starting position.
- Turn in a counter-clockwise direction.
- The exercise is a figure-eight movement.
- Repeat this movement.

Sideways Walking

- Stand up tall near a table and place your hands on your hips.
- Take 10 steps to the right.
- Take 10 steps to the left.
- Repeat.



Heel Toe Standing – Hold Support

- Stand up tall beside a table.
- Hold onto the table and look ahead.
- Place one foot directly in front of the other foot so your feet form a straight line.
- Hold this position for 10 seconds.
- Change position and place the foot behind direct other.
- Hold this position for 10 seconds.

Heel Toe Walking – Hold Support

- Stand up tall beside a table.
- Hold on and look ahead.
- Place one foot directly in front of the other so your feet form a straight line.
- Place the foot behind directly in front of the other.
- Repeat for 10 more steps.
- Turn around.
- Repeat this exercise.

One Leg Stand – Hold Support

- Stand up tall beside the table.
- Hold on and look ahead.
- Stand on one leg.
- Try to hold this position for 10 seconds.
- Stand on the other leg.
- Try to hold this position for 10 seconds.

One Leg Stand – No Support

- Position yourself near a table.
- Stand on one leg.
- Try to hold this position for 10 seconds.
- Stand on the other leg.
- Try to hold this position for 10 seconds.

One Leg Stand – No Support

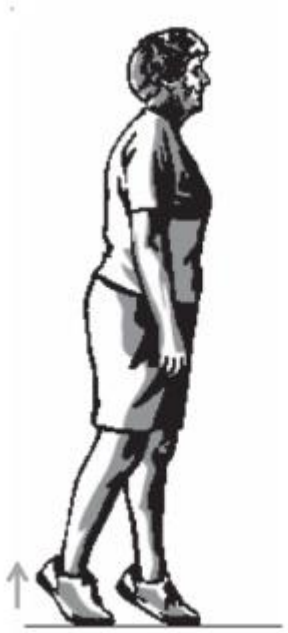
- Position yourself near a table.
- Stand on one leg.
- Try to hold this position for up to 30 seconds.
- Stand on the other leg.
- Try to hold this position for up to 30 seconds.

Heel Walking – Hold Support

- Stand up tall beside a table.
- Hold on and look ahead.
- Come back onto your heels, raising the front of your foot off the floor.
- Walk 10 steps on your heels.
- Lower your feet to the ground and turn around.
- Walk 10 steps on your heels.
- Repeat.

Toe Walking – Hold Support

- Stand up tall beside a table.
- Hold on and look ahead.
- Come up onto your toes.
- Walk 10 steps on your toes.
- Lower your heels to the ground and turn around.
- Walk 10 steps on your toes.
- Repeat.



Heel Toe Walking Backwards

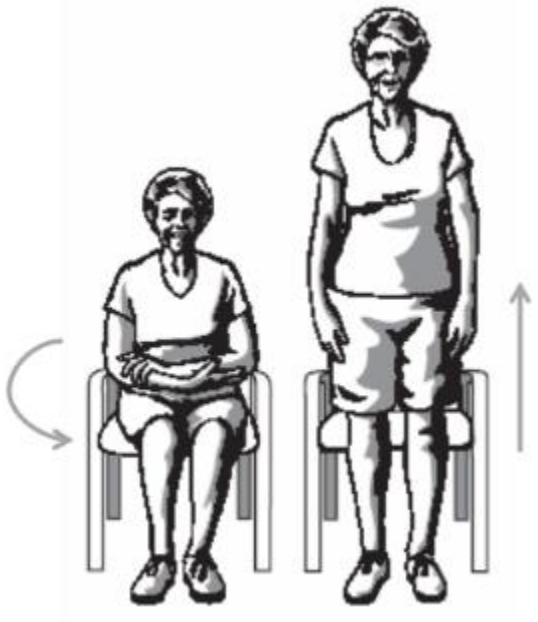
- Stand up tall near a table and look ahead.
- Place one foot directly behind the other foot.
- Place the foot in front directly behind.
- Repeat for 10 more steps.
- Turn around.
- Repeat the exercise.

Stand To Sit – Two Hands

- Sit on a chair that is not too low.
- Place your feet behind your knees.
- Lean forward over your knees.
- Push off with both hands to stand up.
- Repeat ___ time(s).

Stand To Sit – One Hand

- Sit on a chair that is not too low.
- Place your feet behind your knees.
- Lean forward over your knees.
- Use one hand to help you stand up.
- Repeat ___ time(s).



Stand To Sit – No Hands

- Sit on a chair that is not too low.
- Place your feet behind your knees.
- Lean forward over your knees.
- Stand up without using your hands.
- Repeat ___ time(s).

Stair Walking

- Hold onto the handrail for this exercise.
- Go up and down the stairs for ___ steps.


سپاس از حسن توجه شما


بسم الله الرحمن الرحیم


دانشکده تربیت بدنی و علوم ورزشی

دانشگاه خوارزمی

هفته پژوهش و فناوری

سمپوزیوم

ورزش سالمندی

زمان برگزاری:

چهارشنبه ۲۴ آذر ماه ساعت ۱۷–۱۳

https://pess.khu.ac.ir

@ faculty_physicaleducation_khu

دانشگاه خوارزمی

هفته پژوهش و فناوری

سمپوزیوم

ورزش سالمندی

دکتر رضا حبیبی

عضو هیات علمی دانشگاه خوارزمی

تمرینات آب در ورزش سالمندان

Terminology

Aquatic Exercise

Hydrotherapy

Spatherapy

Balneotherapy

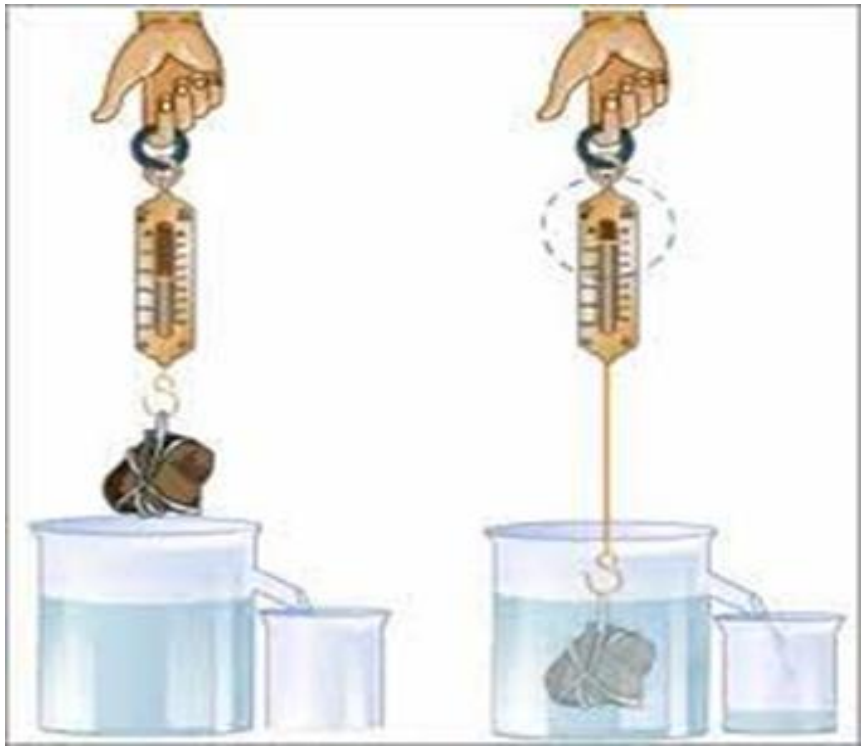
Aromatherapy

علائم بدنی

- محدودیت حرکتی
- عدم تعادل
- قدرت عضلانی
- کاهش وزن
- افزایش وزن
- بیماریها

خواص آب

- قانون ارشمیدس
- بیونسی
- فشار هیدرواستاتیک
- مقاومت آب
- چگالی

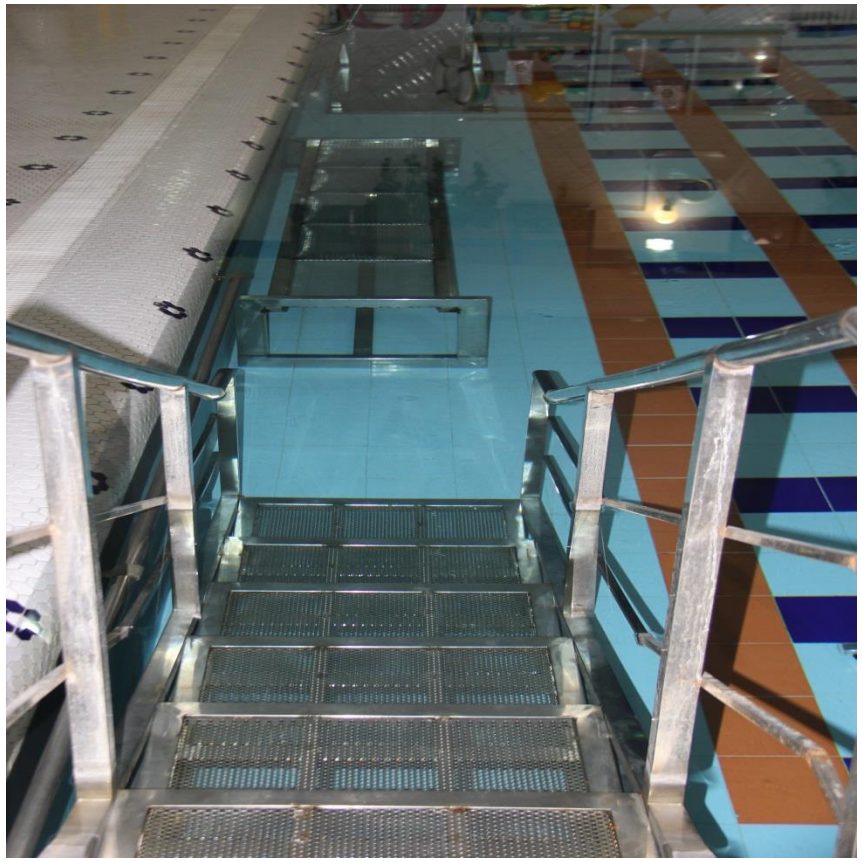


$$\text{چگالی density} \quad \rho = \frac{\text{جرم mass } m}{\text{حجم volume } V}$$

محدودیت های محیط آبی

- ✓زخم باز-بخیه جراحی
- ✓عفونت پوستی
- ✓فشارخون بالا یا پایین
- ✓حساسیت به محصولات شیمیایی
- ✓کاهش ظرفیت تنفسی
- ✓عفونت مثانه و واژینال
- ✓عدم کنترل
- ✓ترس از آب
- ✓صرع

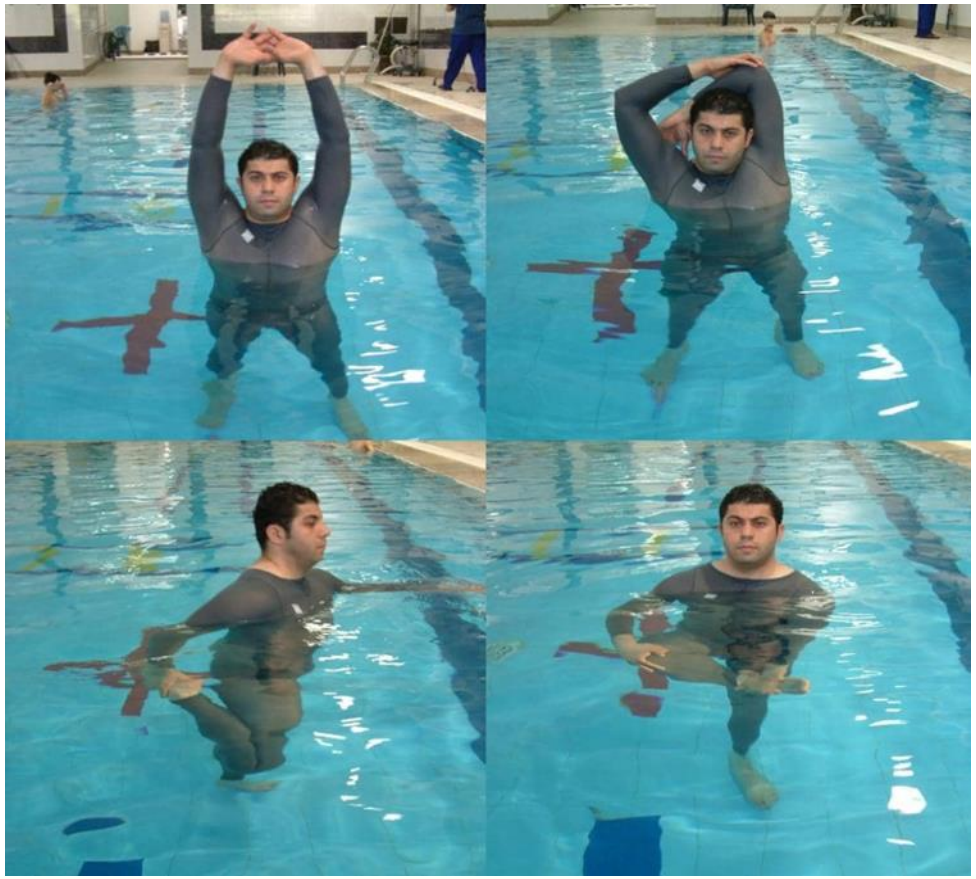
جلسه تمرین



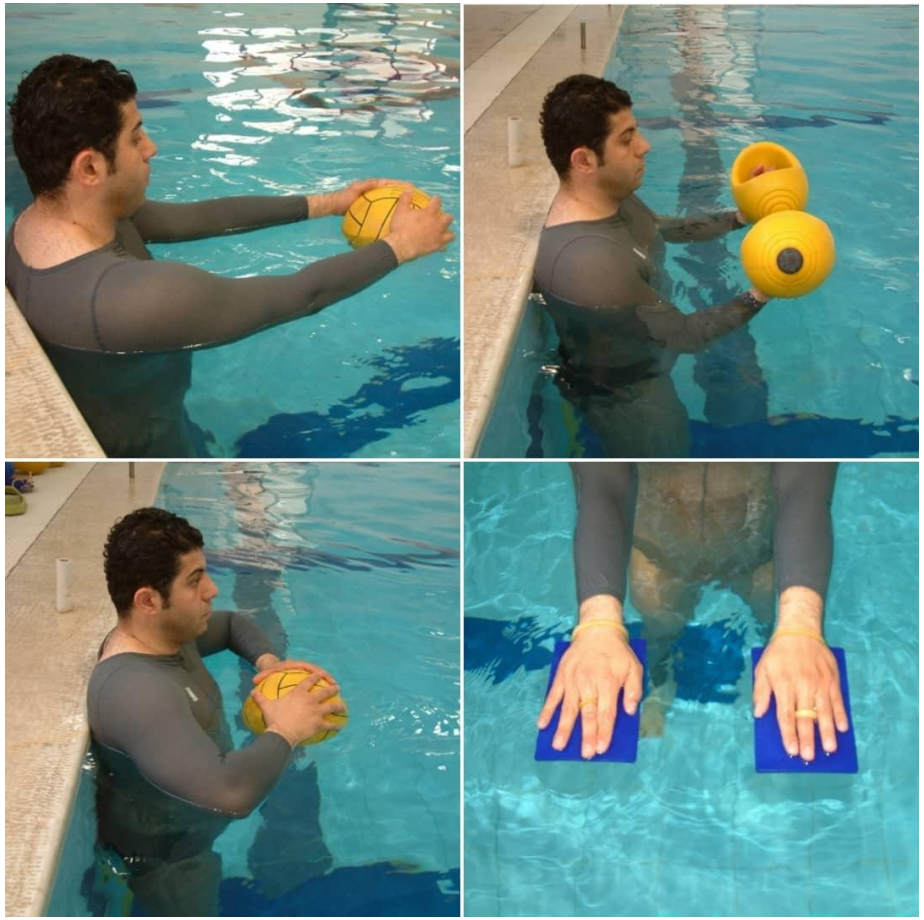
- ❑گرم کردن
- ❑توسعه قدرت
- ❑توسعه استقامت
- ❑سرد کردن

گرم کردن

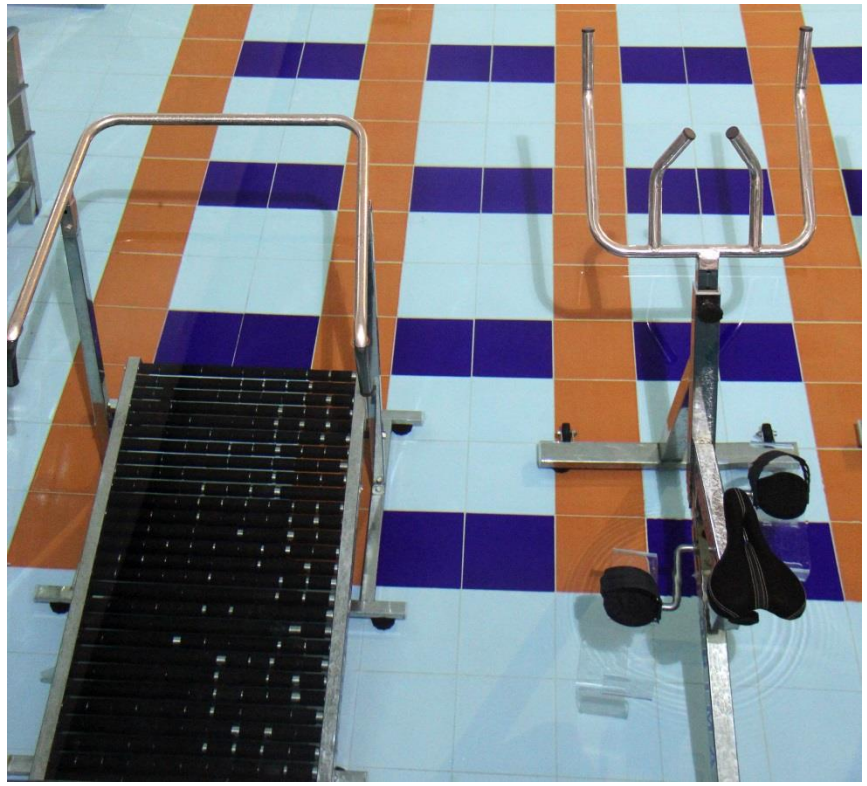
- حرکات کششی
- ۵دقیقه راه رفتن به جلو
- ۵دقیقه راه رفتن به پشت
- ۵دقیقه راه رفتن به پهلو



لوازم قدرتی

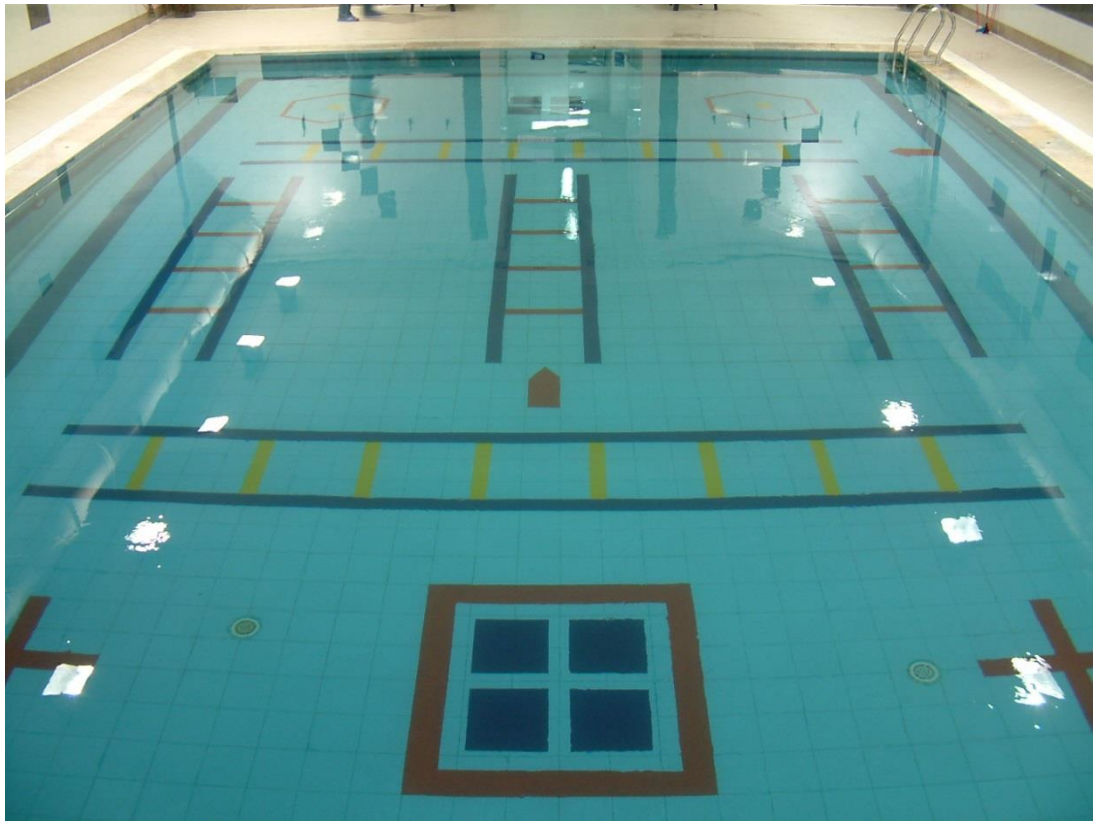


لوازم استقامتی



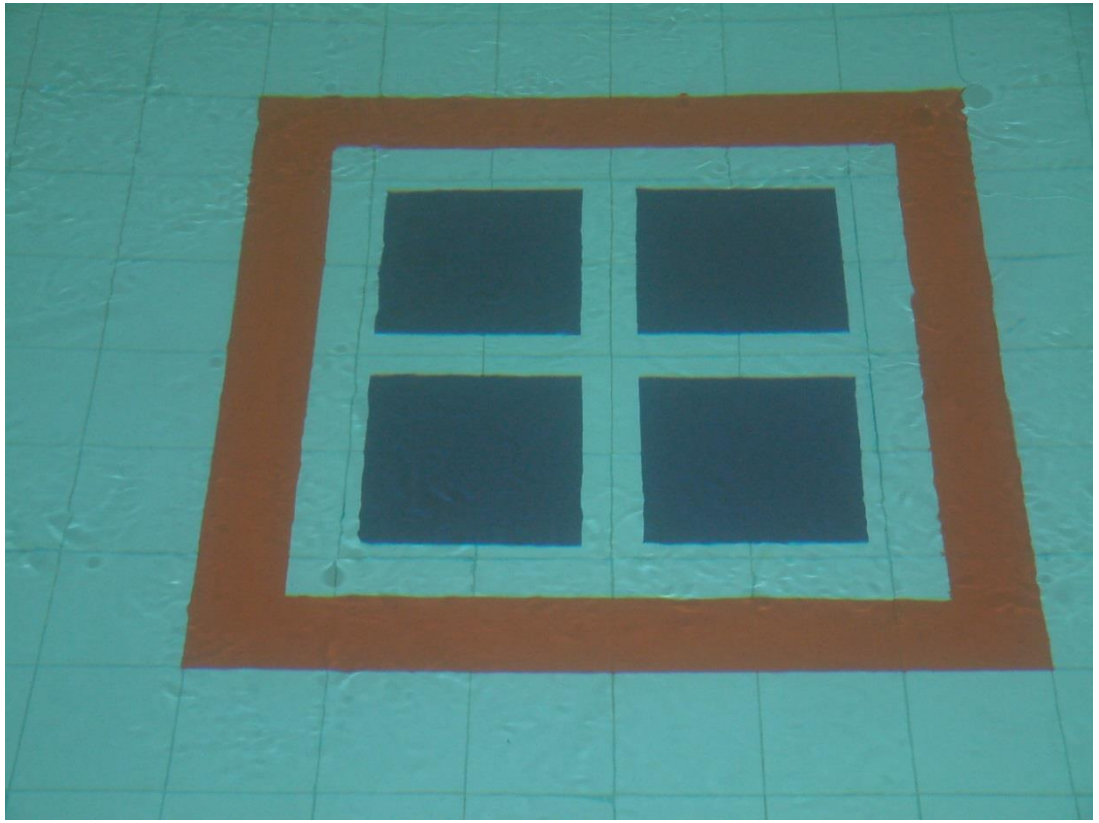
لوازم شناوری

تمرینات سطح مبتدی



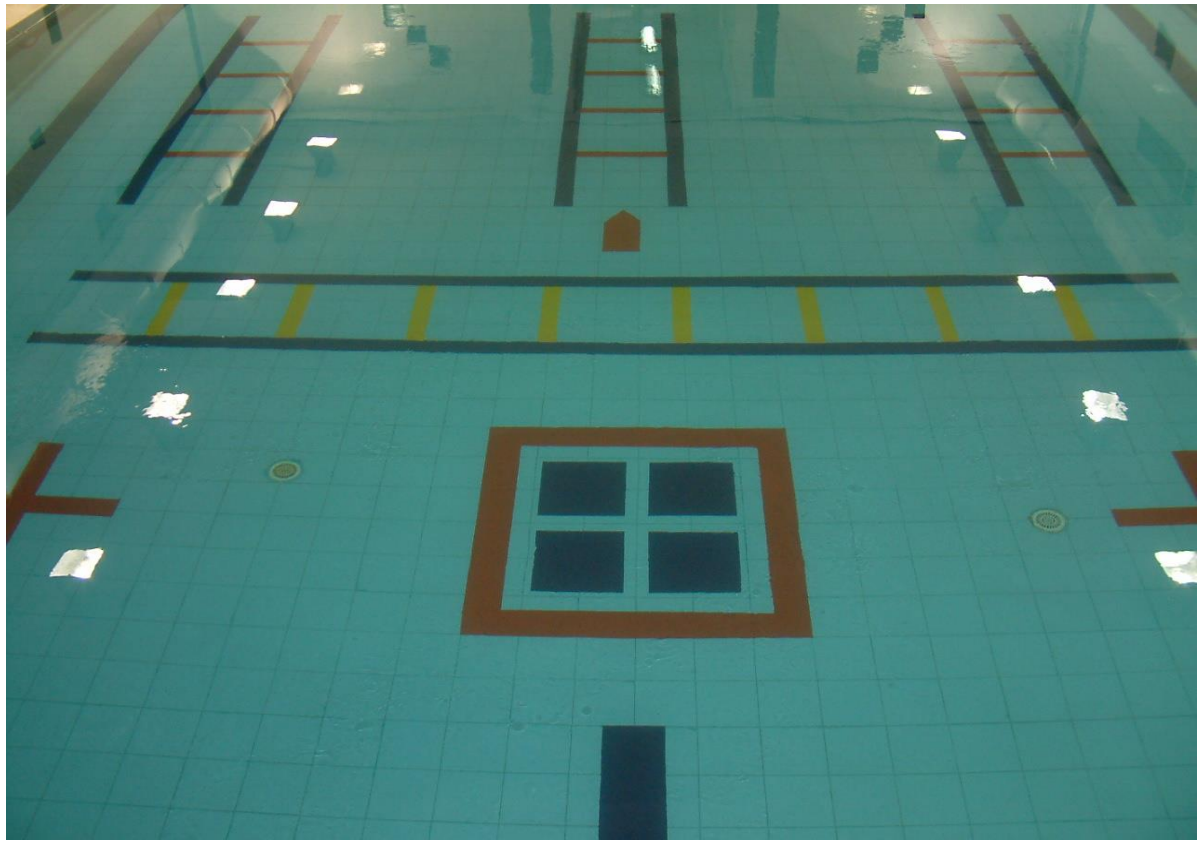
- گرم کردن ۱۵ دقیقه
- ۱ ست و ۱۵ تا ۲۰ تکرار
- فعالیت هوازی ۱۰ تا ۱۵ دقیقه
- سه روز در هفته
- طول دوره ۲ تا ۴ هفته

تمرینات سطح متوسط



- گرم کردن ۱۵ دقیقه
- ۲ ست ۱۵ تا ۲۰ تکرار
- استفاده از لوازم مقاومتی
- فعالیت هوازی ۲۰ تا ۳۰ دقیقه
- طول دوره ۴ تا ۸ هفته

تمرینات سطح پیشرفته



- گرم کردن ۱۵ دقیقه
- ۳ ست ۱۵ تا ۲۰ تکرار
- فعالیت هوازی ۴۰ تا ۶۰ دقیقه
- استفاده از لوازم مقاومتی
- طول دوره بین ۸ تا ۱۲ هفته

سردکردن

با تشکر

rezahabibi816@gmail.com


بسم الله الرحمن الرحیم


دانشکده تربیت بدنی و علوم ورزشی

دانشگاه خوارزمی

هفته پژوهش و فناوری

سمپوزیوم

ورزش سالمندی

زمان برگزاری:

چهارشنبه ۲۴ آذر ماه ساعت ۱۷–۱۳

https://pess.khu.ac.ir

@ faculty_physicaleducation_khu

دانشگاه خوارزمی

هفته پژوهش و فناوری

سمپوزیوم

ورزش سالمندی

دکتر سعید مخلصی

دکتری مدیریت ورزشی دانشگاه خوارزمی

توسعه ورزش سالمندی با رویکرد بازاریابی اجتماعی

هزینه های مستقیم و غیرمستقیم بی فعالیتی

حرکت جمعیت ایران به سمت میان سالی و سالمندی

پایین بودن مشارکت سالمندان در فعالیت بدنی

ضرورت ارتقاء مشارکت سالمندان در فعالیت بدنی

ضرورت ارتقاء مشارکت سالمندان در فعالیت بدنی

تلاش برای ایجاد تغییرات اجتماعی و رفتاری

در راستای ارتقاء مشارکت سالمندان در فعالیت بدنی

بازاریابی اجتماعی

بازاریابی تجاری

↓

فروش یک کالا یا خدمت یا رفتار

↓

هدف: کسب سود

بازاریابی اجتماعی

↓

فروش یک رفتار

↓

هدف: منفعت فرد و اجتماع

هر گونه فعالیت **بازاریابی** که با هدف **تغییر رفتار** در یک جامعه هدف، در راستای **منافع فرد و جامعه** صورت پذیرد، بازاریابی اجتماعی نامیده میشود.

عوامل موثر در مشارکت سالمندان در فعالیت بدنی منظم

موانع درونی

موانع بیرونی

تسهیل کننده ها

موانع درونی مشارکت در فعالیت بدنی

- موانع مربوط به دانش و آگاهی
- موانع جسمانی
- موانع ذهنی و روانشناختی
- موانع اقتصادی
- موانع رفتاری

- خدمات و محصولات مرتبط با فعالیت بدنی
- موانع مربوط به اماکن ورزشی و زیرساخت ها
- موانع مرتبط با پزشک
- موانع کاری و خانوادگی
- موانع مربوط به حمل و نقل و دسترسی
- موانع فرهنگی
- موانع مربوط به هزینه ها
- موانع مربوط به آموزش
- موانع مربوط به اطلاع رسانی

موانع بیرونی مشارکت در فعالیت بدنی

تسهیل کننده ها

- مشوق ها
- آموزش و اطلاع رسانی
- تسهیل کننده های فردی
- انگیزه های درونی
- انگیزه های بیرونی

یکی از مزایای رویکرد بازاریابی اجتماعی بخش بندی مخاطبان هدف است

- آگاه و پر درآمد
- نا آگاه و پر درآمد
- آگاه و کم درآمد
- نا آگاه و کم درآمد

Social Marketing Mix

- Product
- Price
- Place
- Promotion

محصول:

مجموعه‌ای از مزایای مربوط به رفتار مطلوب یا خدمات مورد استفاده

راهبردهای محصول:

- ❑ **راهبردهای افزایش دهنده‌ی منفعت حاصل از پذیرش رفتار**
- ❑ **ملموس‌سازی رفتار مطلوب**


محصول تکمیلی
محصول واقعی
محصول اصلی
مجموعه‌ای از
مزایا
رفتار مطلوب
کالا یا خدمت محسوس

Product

- راهبردهای مربوط به ماهیت فعالیت بدنی به عنوان محصول واقعی
- ملموس‌سازی نتایج حاصل از مشارکت در فعالیت بدنی به عنوان محصول اصلی
- محصولات و خدمات تسهیل کننده‌ی مشارکت در فعالیت بدنی به عنوان محصول تکمیلی

- ❑آموزش و تربیت مربیان ویژه ورزش سالمندان (محصول واقعی)
- ❑افزایش سهم فعالیت بدنی در توصیه‌های پزشکی (محصول اصلی)
- ❑وجود کلاس‌های ورزشی متناسب با نیازهای ورزشی سالمندان (محصول تکمیلی)

Place

مکان و زمانی که مخاطب هدف:

- رفتار مطلوب را انجام می‌دهد
- به هر نوع هدف ملموس مربوط به رفتار مورد نظر دست می‌یابد
- هر نوع خدمت مربوط را دریافت می‌کند

راهبردهای مکان:

راهبردهایی جهت دسترسی راحت به محصول واقعی یا تکمیلی و افزایش راحتی انجام رفتار مطلوب

Place

- سالم سازی و ایمن سازی پیاده‌روهای شهری
- افزایش کمیت و کیفیت مجموعه‌های ورزشی خصوصی
- ارائه‌ی آموزش‌های ویژه‌ی سالمندان در پارک‌ها و اماکن عمومی

قیمت:

هزینه‌های ملموس و غیر ملموس که برای مزایای وعده داده شده به ازای تغییر رفتار صرف می‌شوند

راهبردهای قیمت:

راهبردهایی جهت کاهش موانع درک شده توسط مخاطبین هدف برای اجرای رفتار مطلوب

Price

- ✓ دریافت حق بیمه بر اساس میزان آمادگی جسمانی افراد
- ✓ تخصیص یارانه‌ی ورزشی به اقشار کم‌درآمد
- ✓ اعطای تسهیلات برای تاسیس مجموعه‌های ورزشی سلامت محور
- ✓ ارائه‌ی کوپن‌های تخفیفی استفاده از مجموعه‌های ورزشی به عنوان بخشی از حقوق و مزایا

ترویج:

ارتباطات با مخاطبان جهت اینکه محصول یا خدمت برای آن‌ها آشنا، پذیرفتنی و مطلوب شود.

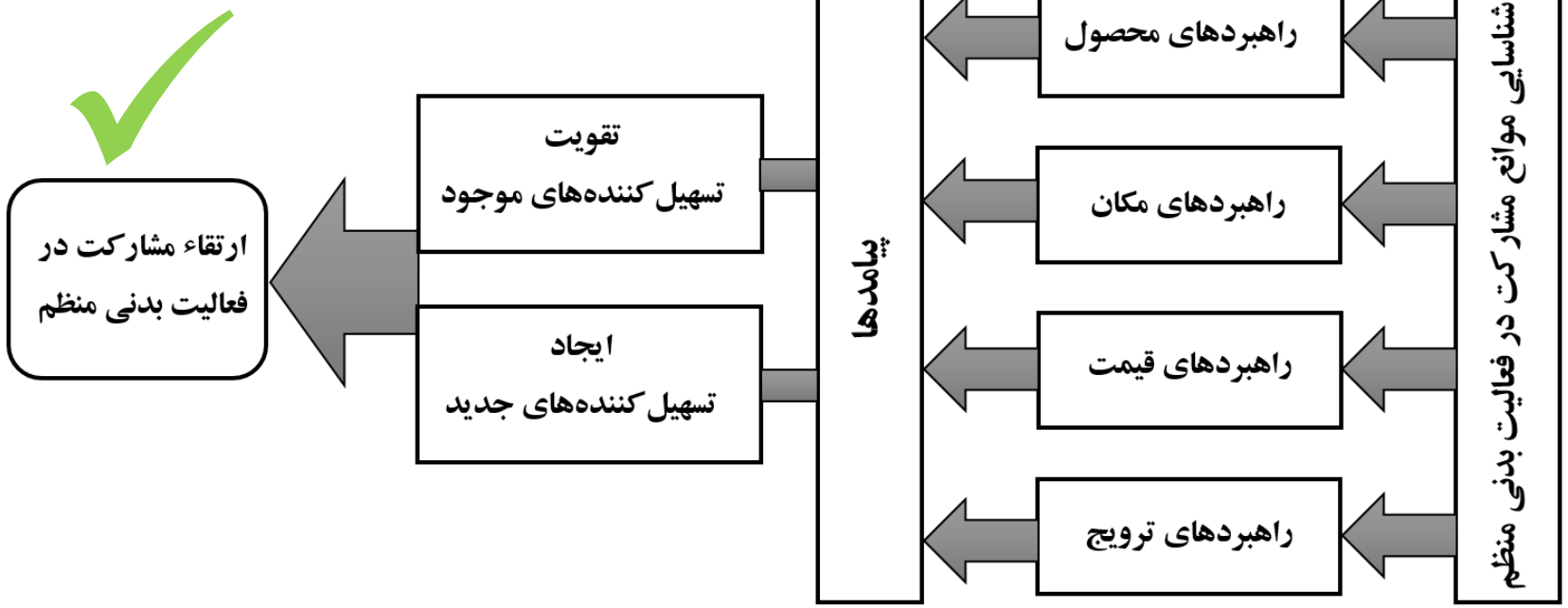
راهبردهای ترویج:

- ✓ **راهبردهای ترغیب مخاطبین هدف**
- ✓ **اطلاع رسانی و یادآوری کردن در مورد ارزش تغییر رفتار و سایر مولفه‌های آمیخته‌ی بازاریابی**
- ✓ **راهبردهای رسانه‌ای جهت پخش پیام‌هایی برای مخاطبین هدف**

Promotion

- تسهیل تبلیغات مجموعه‌های ورزشی سلامت محور در رسانه‌های مختلف
- طراحی پیام‌های جالب توجه و جذاب برای ترویج فعالیت بدنی در سالمندان
- استفاده از رسانه‌ها و کانال‌های ارتباطی چندگانه برای ترویج فعالیت بدنی
- ترویج فعالیت بدنی توسط الگوهای مشهور و محبوب

یکپارچگی آمیخته بازاریابی اجتماعی


شناسایی موانع مشارکت در فعالیت بدنی منظم
راهبردهای محصول
راهبردهای مکان
راهبردهای قیمت
راهبردهای ترویج
پیامدها
تقویت
تسهیل کننده‌های موجود
ایجاد
تسهیل کننده‌های جدید
ارتقاء مشارکت در
فعالیت بدنی منظم


سپاس از حسن توجه شما