



وزارت صحت و تندرستی
حکومت پنجاب



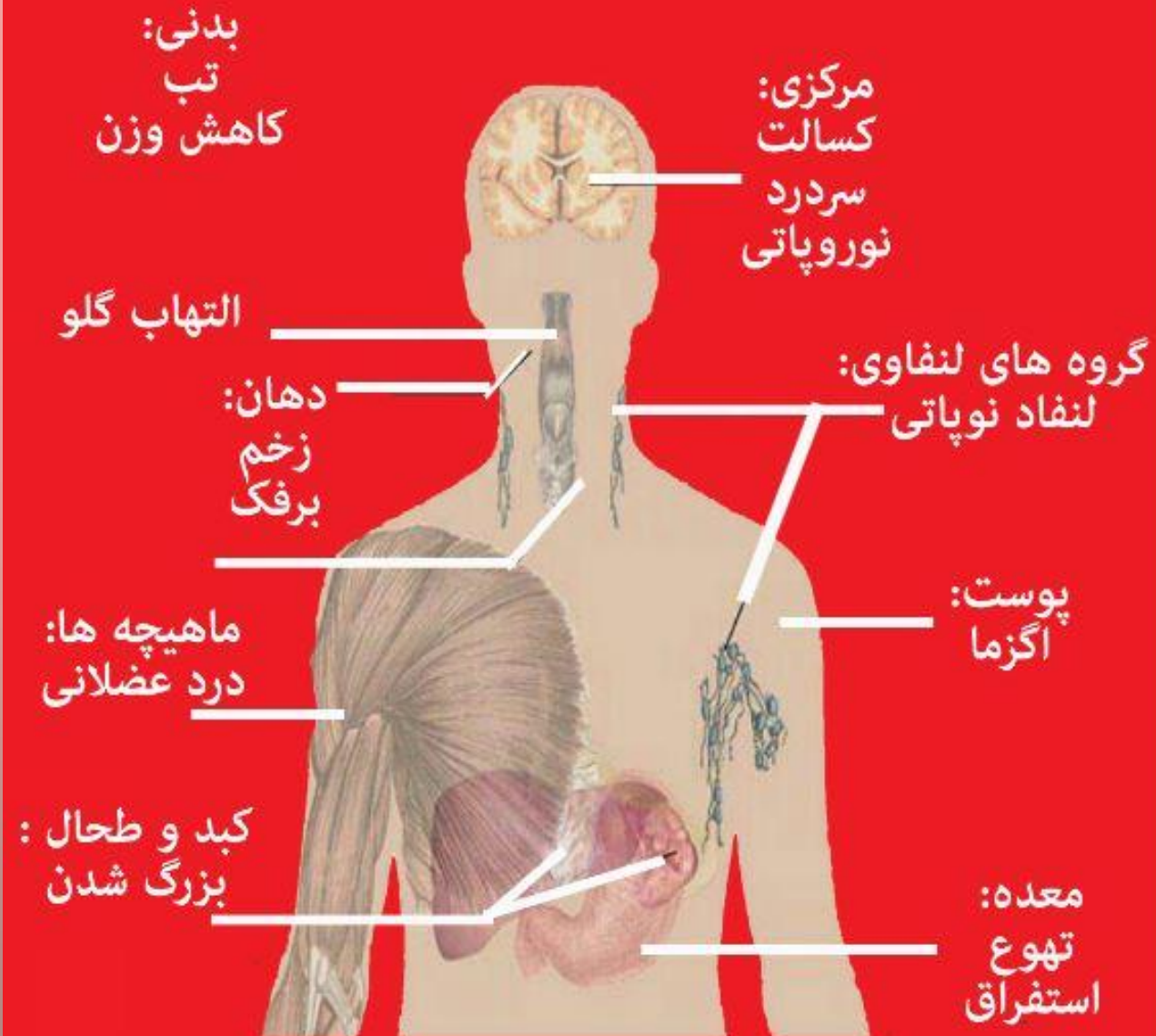
دکتر محمد علی طیبی

زمستان ۱۴۰۲





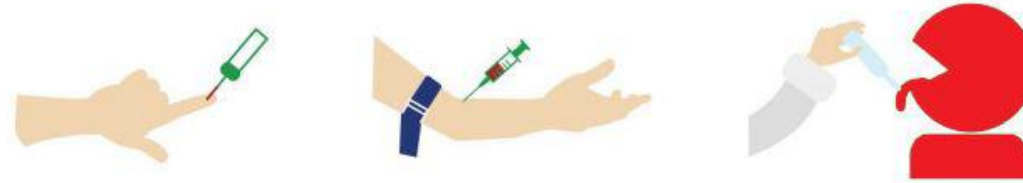
علائم اصلی عفونت HIV حاد



بیماری ایدز چیست؟



ایدز (HIV) را بیشتر بشناسید



آزمایش HIV با گرفتن بزاق فرد با استفاده از سوآپ دهانی، گرفتن خون از انگشت و دست انجام پذیر است.

راه هایی که HIV منتقل می شود



رابطه جنسی بدون استفاده از کاندوم



انتقال از مادر حامل آلوده به بچه



به اشتراک گذاری وسایل تزریق



انتقال خون آلوده یا پیوند عضو آلوده

راه هایی که HIV منتقل نمی شود



نیش حشرات



توالت فرنگی



بوسیدن



به اشتراک گذاری وسایل غذاخوری



لمس کردن

Morphological changes in HIV patients with lipodystrophy syndrome



وزارت صحت و تندرستی
حکومت پنجاب





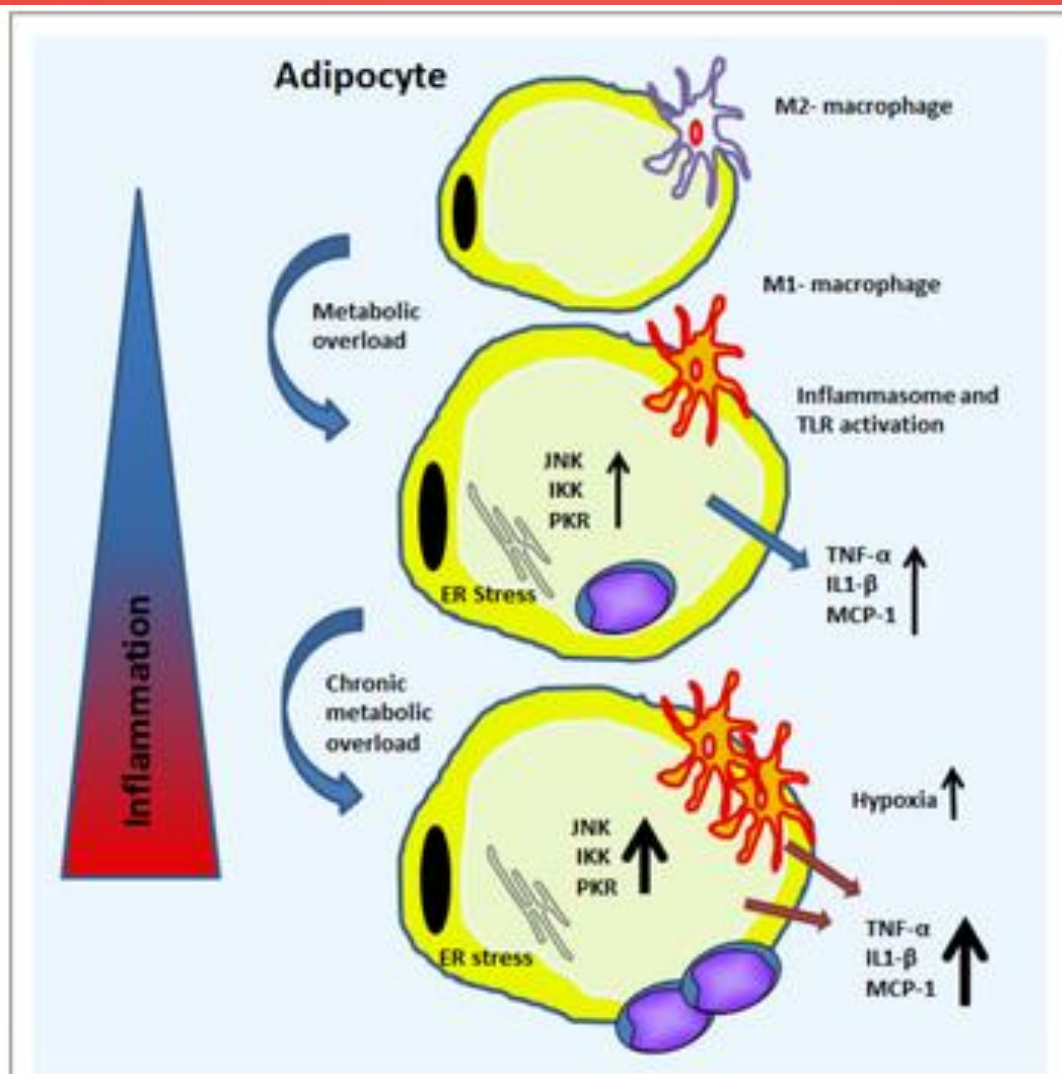


Figure 1

Consequences of a prolonged metabolic overload in metabolic tissues. IKK=Inhibitor of κ kinase; JNK=C-jun N-terminal kinase; PKR=Protein kinase R; TNF=Tumor necrosis factor; IL=Interleukin; MCP=Monocyte chemotatic protein TLR=Toll-like receptors; ER=Endoplasmatic reticulum.

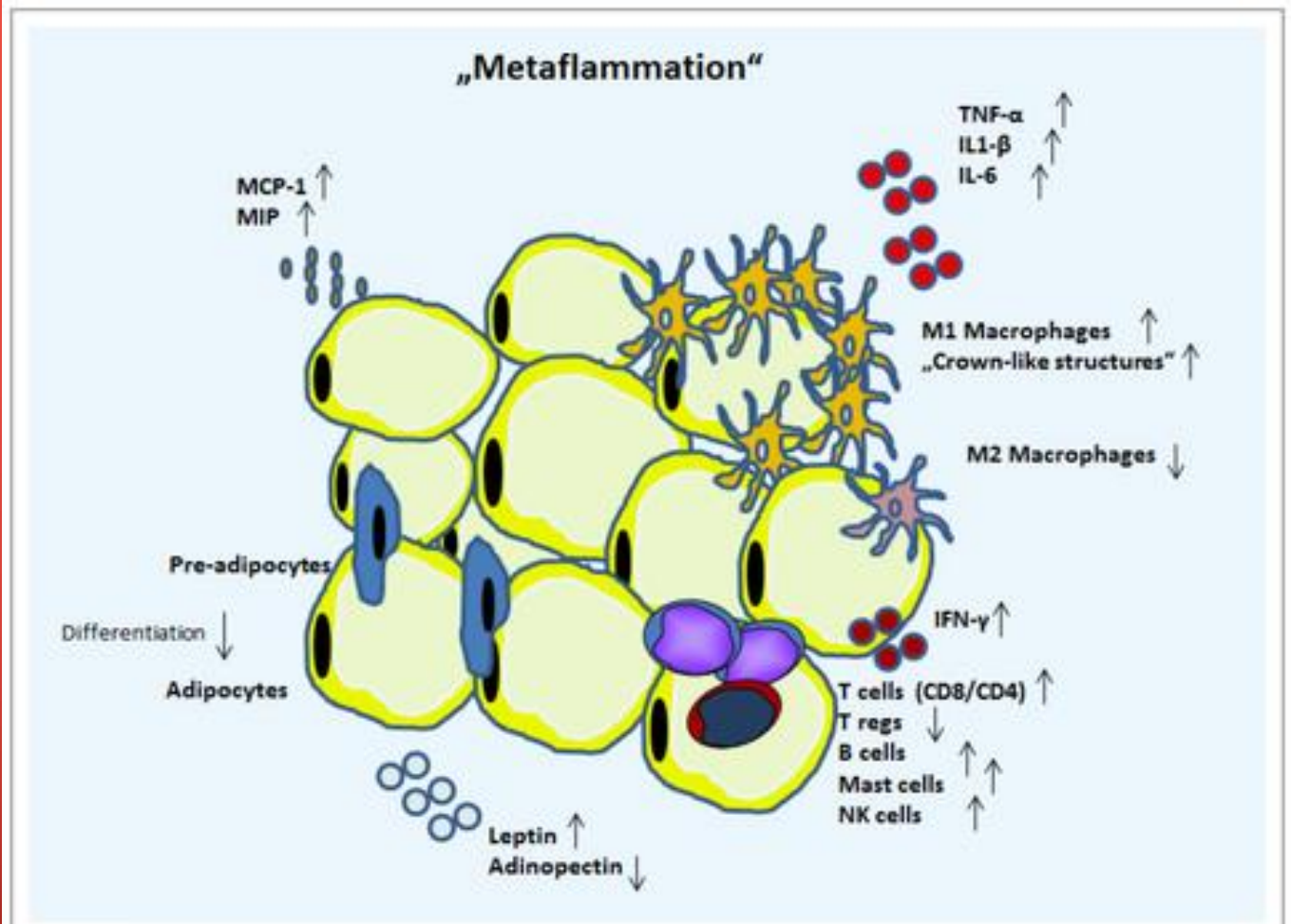
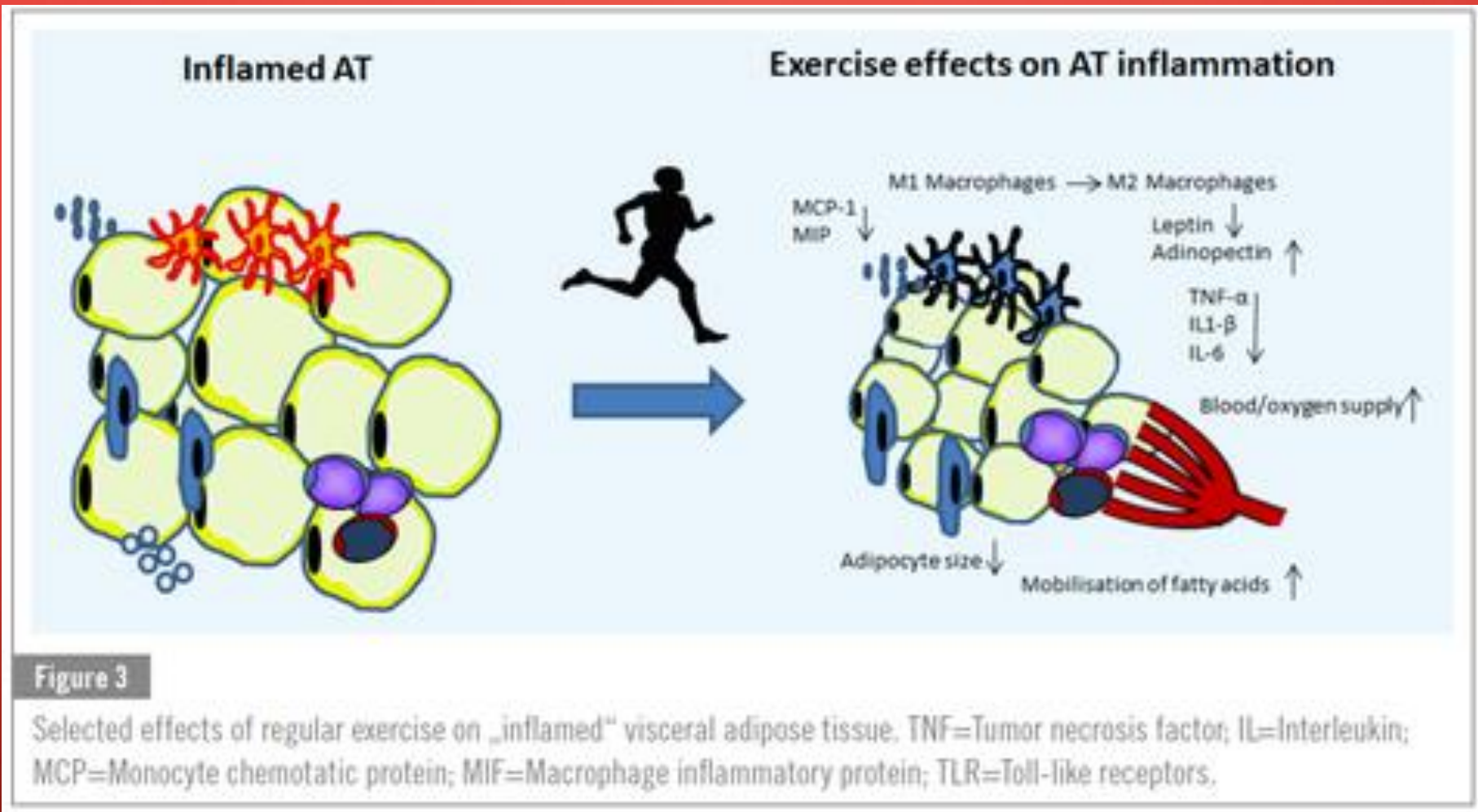


Figure 2

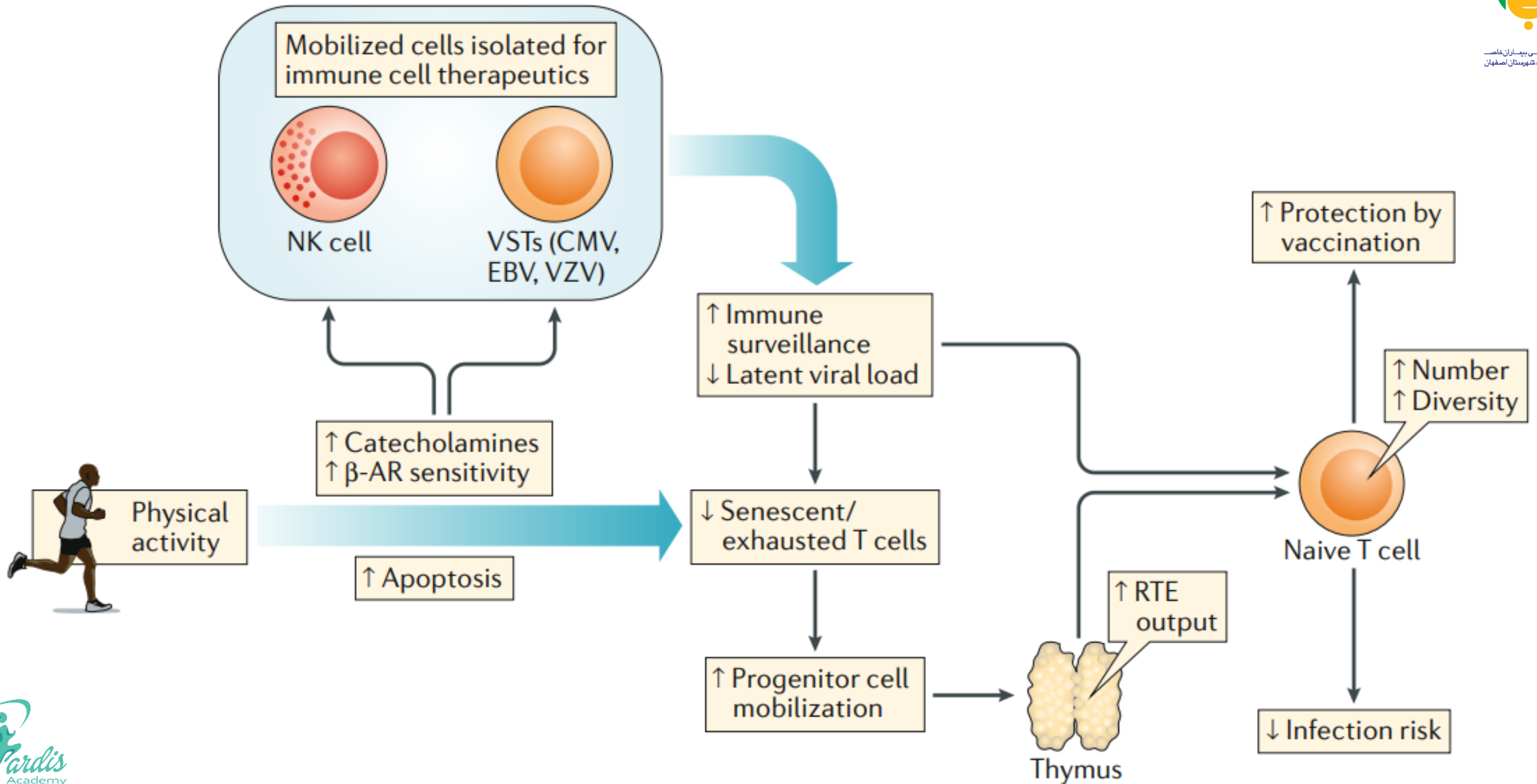
Immunological changes in an „inflamed“ visceral adipose tissue. TNF=Tumor necrosis factor; IL=Interleukin; MCP=Monocyte chemotatic protein; MIP=Macrophage inflammatory protein; TLR=Toll-like receptors; IFN=Interferone, Tregs=Regulatory T cells.



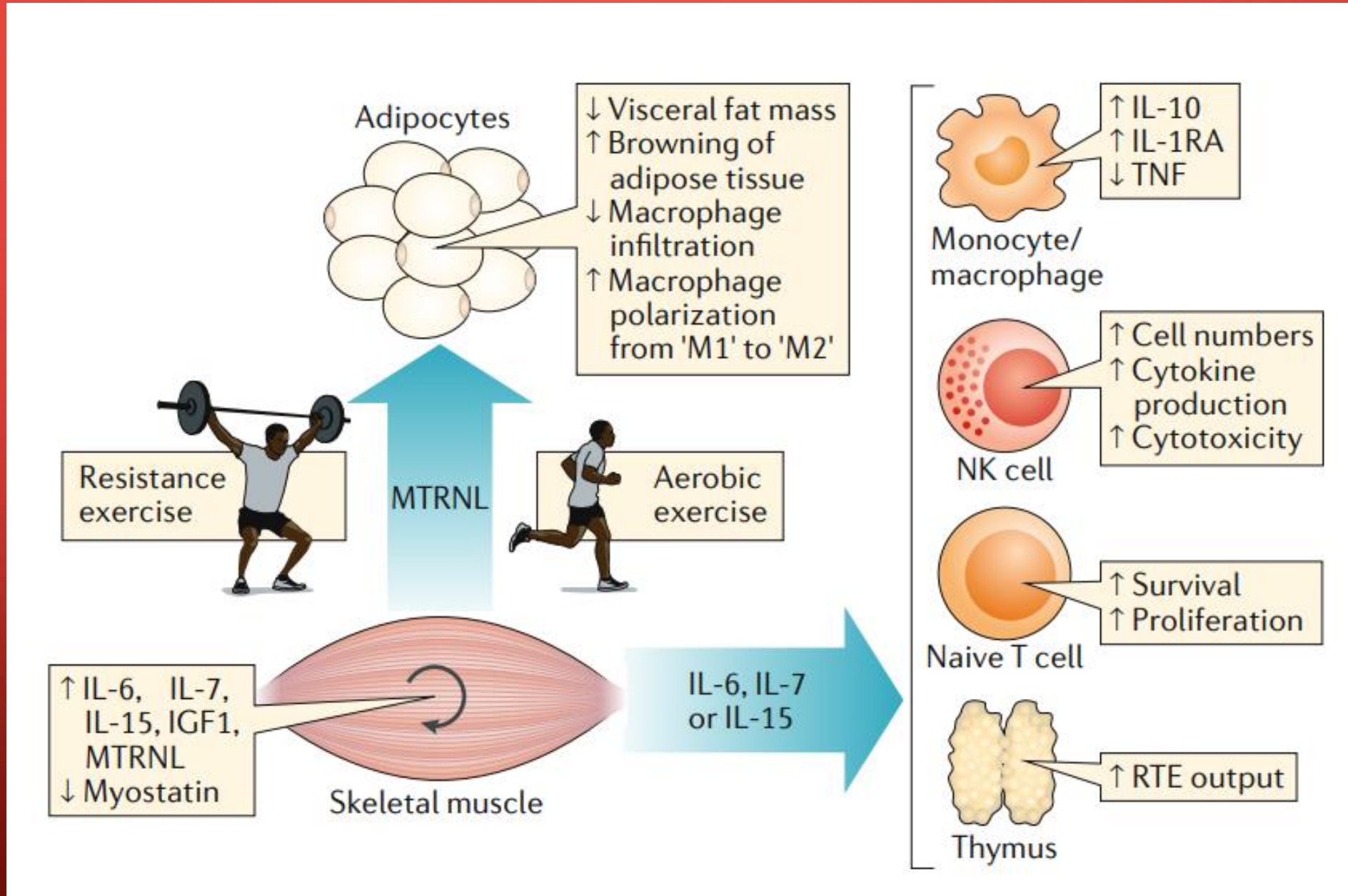
Physical activity as an immune adjuvant



انستیتوت ورزشی و بهداشتی
یونیورسیتی تبریز



muscle as an immune regulatory organ





زمان استراحت حرکت اول : زمان ۳۰ ثانیه

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ضرورت ورزش



Benefits of exercise on the immune system



وزارت صحت و تندرستی
حکومت پنجاب پاکستان

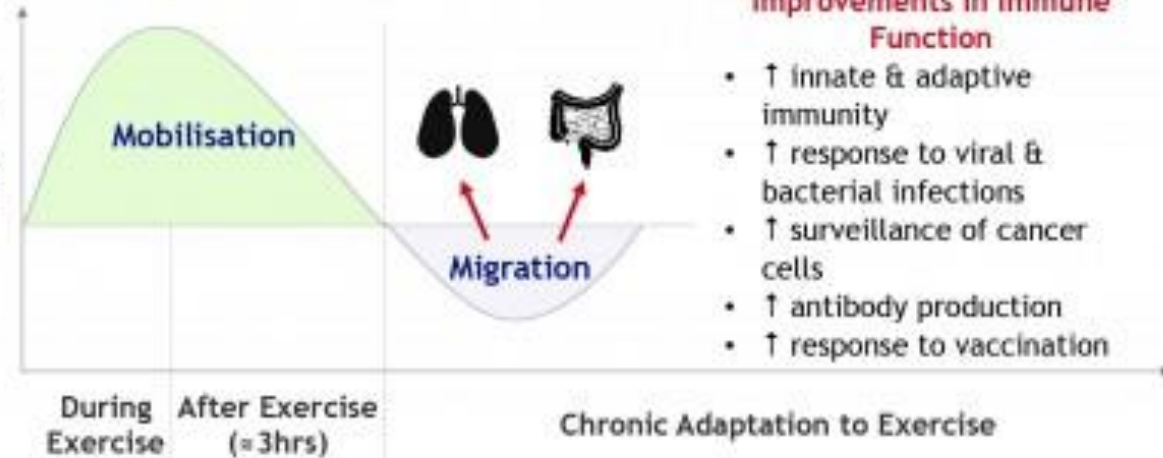
Increased cardiac output,
blood flow and stress
hormones



Exercise-induced
mobilisation of
immune cells



Immune Cell
Numbers
in Blood



Improvements in Immune Function

- ↑ Innate & adaptive immunity
- ↑ response to viral & bacterial infections
- ↑ surveillance of cancer cells
- ↑ antibody production
- ↑ response to vaccination

Other physiological changes with acute exercise

- Negative energy balance
- Vascular shear stress
- Muscle-derived myokine release

Indirect benefits of exercise on immunity

- ↓ fat mass, thus ↓ inflammation
- ↑ immune cell recirculation
- ↑ anti-inflammatory blood profile



Physical Exercises

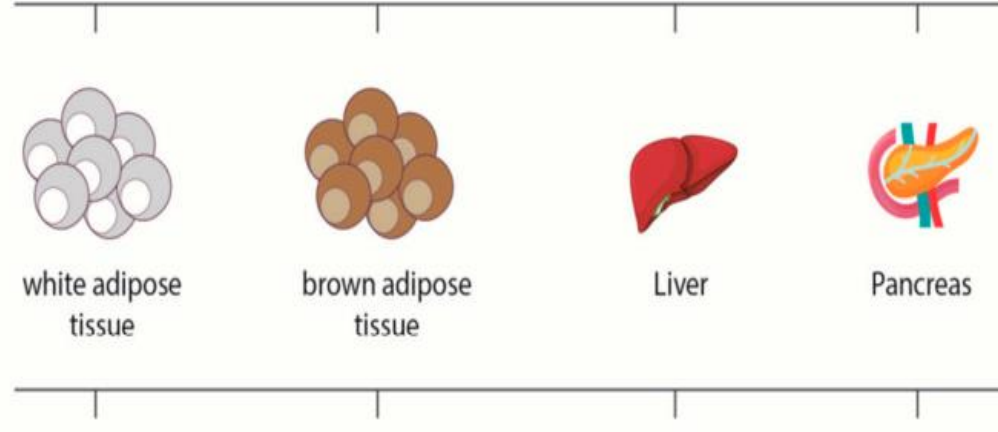


↑ Decorin
↑ IGF - 1



↑ Myonectin
↑ Apelin
↑ Musculin
↑ IL - 6

- ↑ Decorin
 - ↑ Irisin
 - ↑ Myonectin
 - ↑ Apelin
 - ↑ Musculin
 - ↑ IL- 15
 - ↑ IGF - 1
 - ↑ IL- 6
- ↓ Myostatin



- ↑ lipolyses
- ↑ glucose uptake
- ↑ browning /
- ↑ thermogenesis
- ↑ ucp
- ↑ oxygen consumption
- ↑ thermogenesis
- ↑ β oxidação
- ↓ WAT
- regulatianol of glycogenolysis and glycogenesis
- ↑ GLP - 1

Systemic effects of some myokines. After resistance exercise, specific myokines, such as decorin and IGF-1, are released; after endurance training, other specific myokines, such as myonectin, apelin, musclin, and IL-6, are produced and play different roles in different tissues. IGF-1: insulin-like growth factor-1; IL-6: interleukin-6; IL-15: interleukin-15; UCP: uncoupling protein; WAT: white adipose tissue; GLP-1: glucagon-like peptide-1. Up arrows indicate increase; down arrows indicate reduction.

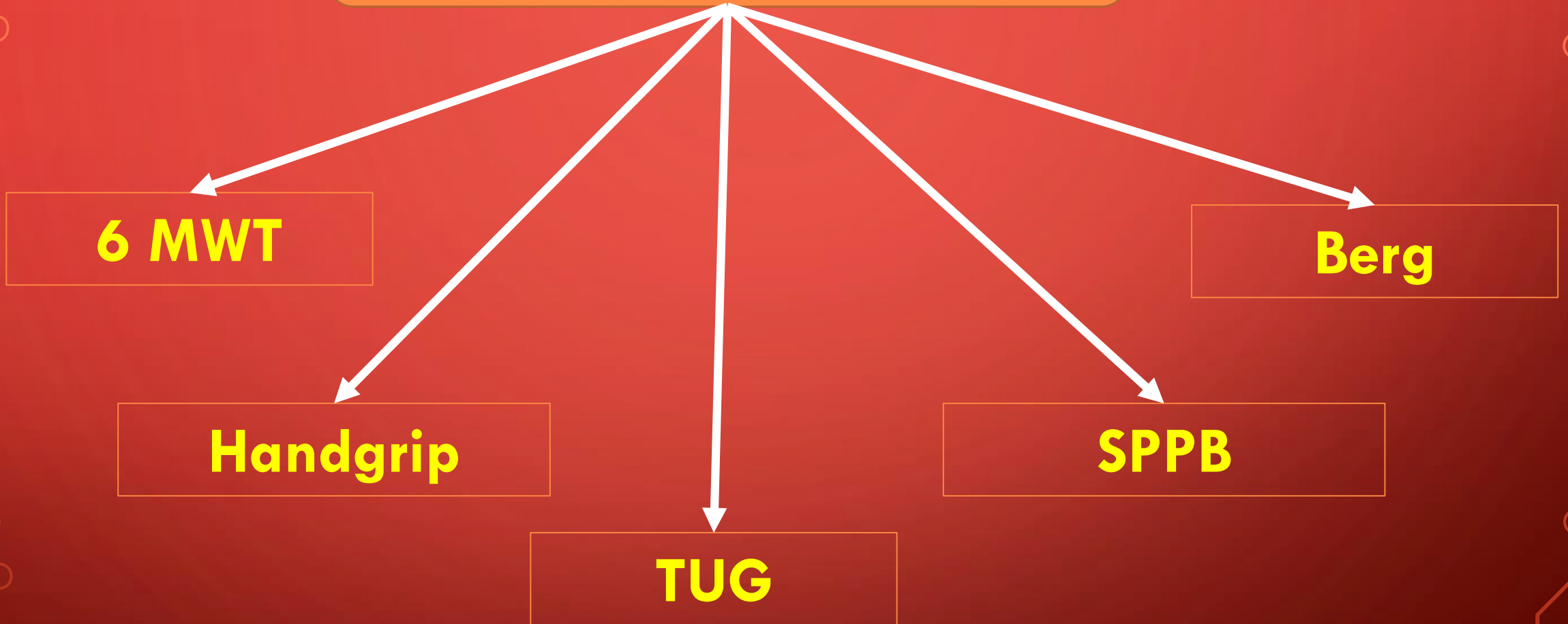
مزایای ورزش

- بهبود خلق و خو
- بهبود سیستم ایمنی
- افزایش توده استخوان
- افزایش ظرفیت هوازی
- افزایش کیفیت زندگی
- کاهش توده چربی شکمی
- کاهش خطر ابتلا به دیابت
- افزایش استقامت قلبی تنفسی و عضلانی
- کاهش خطر ابتلا به بیماری های قلبی عروقی





ارزیابی وضعیت عملکردی



توجه: اگر بیمار هنوز افت عملکردی پیدا نکرده است، فقط از ACSM's Risk Stratification استفاده کنید.



تجویز تمرین

Aerobic

Yoga exercise

Flexibility

Balance Exercise

Strength



FITT

FITT RECOMMENDATIONS FOR INDIVIDUALS WITH HUMAN IMMUNODEFICIENCY VIRUS

	Aerobic	Resistance	Flexibility
Frequency	3-5 d • wk ⁻¹	2-3 d • wk ⁻¹	≥2-3 d • wk ⁻¹
Intensity	Begin at light intensity (30%-39% √ O ₂ R or HRR). Gradually progress to moderate intensity (40%-59% √ O ₂ R or HRR).	Begin at light intensity with goal of gradual progression to 60% 1-RM.	Stretch to the point of tightness or slight discomfort.
Time	Begin with 10 min and progress to 30-60 min • d ⁻¹ .	1-2 sets, with gradual progression to 3 sets of 8-10 repetitions	Hold static stretch for 10-30 s; 2-4 repetitions of each exercise
Type	Modality will vary with the health status and interests of the individual. Presence of osteopenia will require weight-bearing physical activities.	Machine weights are safe and effective without supervision; free weights can be used for experienced lifters and/or under supervision.	Static, dynamic, and/or PNF stretching

1-RM, one repetition maximum; HRR, heart rate reserve; PNF, proprioceptive neuromuscular facilitation; √ O₂R, oxygen uptake reserve.

EIM Rx for HIV Patients



مركز تخصصي في مجال الطب
والتدريب الرياضي واللياقة البدنية

HIV/AIDS

Exercise
is Medicine[®] | AMERICAN COLLEGE
of SPORTS MEDICINE

Do you want to feel better, move better and sleep better? Experts now say that any physical activity counts toward better health – even just a few minutes!

Staying active is important for people living with human immunodeficiency virus, or HIV. A well-designed physical activity program can help make your HIV treatment more effective and give you more energy. There is no evidence that regular moderate exercise suppresses the immune system. Strength training is very important for people with HIV because it can help slow down the loss of muscle or bone sometimes caused by the virus or HIV medications.

Certain antiretroviral (ART) drugs increase your risk of developing health conditions such as unhealthy cholesterol, changes in body fat (how much and where it sits), type 2 diabetes, heart problems or weak bones. Both aerobic activity and strength training improve these health problems. If you are an adult with HIV who is responding well to treatment, being active is both safe and essential.

Getting Started

Keep It Simple

Sit less and move around more! Walk to the mailbox. Walk the dog. Dance in the kitchen. Take the stairs. Find opportunities to move throughout the day. It all adds up.



Be Active with a Friend

Do activities that you enjoy and find an activity buddy at home or work. Those who exercise with a friend tend to stick with it longer than those who go it alone.



Motivation

Use an activity tracker or smart phone app to measure your progress and stay motivated. Count your steps daily for the first week. Slowly build up to 7,000-9,000 steps/day.



HIV Tips and Cautions

Talk to your health care provider before getting active, especially if you are having HIV-related symptoms or side-effects from ARTs. Will any medications you are taking affect how you respond to exercise?

Many HIV drugs can cause side effects, including diarrhea, dizziness, headaches, fatigue, fever, muscle aches, nausea and vomiting. Work with your health care team to adjust your activity program.

If you have osteopenia, or weak bones, talk to your provider about weight-bearing or strength training activities that can help.



Aerobic Activity



Aerobic activity increases your heart rate and breathing. Build up to doing at least 150 minutes a week of moderate-intensity activity (like a brisk walk, light bike, water exercise or dancing).

What?

Any rhythmic, continuous activity!



How often?

3-5 days/week



Intensity?

Fairly light to somewhat hard.



How much?

Start with a few minutes. Gradually build up to 30-60 minutes over the day.



Remember: Fit in 5 or 10 minutes here and there. Or go for 20-30 minutes. Be active however and wherever you can. To lose weight, do twice as much activity.

Aerobic Activity Cautions

- Avoid doing lots of vigorous exercise. If you exercise at too high of an intensity, you'll tire out quicker. Very strenuous exercise can affect your immune function and increases your risk of injury or a heart problem.
- Start at a comfortable effort level and increase gradually. Progress may be slow at first due to virus symptoms and drug side effects, but stick with it.
- Total activity time is more important than intensity. Start low and go slow!
- If you have pain for more than 2 hours after activity, go shorter and easier next time.
- Warm up and cool down at an easy pace before and after exercise.

Strength Training



Strength training is especially important to counter some of the effects of HIV infection, for example muscle or bone loss. Plus, strength training can make daily activities like lifting laundry baskets or yardwork easier and safer.

What?

Hand weights, resistance bands, weight machines or your own body, (for example, kitchen counter push-ups or chair squats)



How often?

2-3 days/week
*Rest day in between



How hard?

Start with light effort. Build up to medium effort.



How much?

8-10 repetitions. 1-2 sets (for each major muscle group). Build up to 3 sets.



Remember: Avoid straining or holding your breath when lifting. If you need it, get help from a certified exercise professional. They can teach you the right way to do exercises and how to breathe properly.



Other Types of Physical Activity



Aerobic activity and strength training are at the heart of a program for those with HIV/AIDS. But you may enjoy and benefit from these other options.

Just for Fun

Find ways of being active that are just plain fun. Try pickleball. Dance. Tend your garden. Play outdoors with your kids or grandkids. Find what makes you smile and do it often.



Yoga, Tai Chi and Pilates

All help with balance, flexibility and strength, and are relaxing too!



Flexibility Exercises

Stretch your muscles 2-3 days/week. Stretch to the point of feeling tightness. Hold for 10-30 seconds (30-60 seconds for older adults) to improve flexibility, joint range of motion and movement.



Balance Training

Balance exercises may include standing on one foot, walking on a line or using a balance board. Train in an uncluttered area and use a chair or wall for support if needed.



More Help

For more information about exercising with HIV, check out this website:
<http://www.thebody.com/index/dietnut/exercise.html>

Go to www.acsm.org/get-stay-certified/find-a-pro to find an **ACSM certified exercise professional** near you.

Start where you are. Use what you have. **Do what you can.**



زمان استراحت حرکت دوم : زمان ۳۰ ثانیه



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ملاحظات تجویز تمرین

- توجه به خستگی فزاینده، احساس تنگی نفس و مشکلات گوارشی
- توجه به تغییرات سریع به ویژه بروز عفونت های حاد در این بیماران
- شناسایی مرحله بیماری فرد مبتلا به HIV (به دلیل تأثیر بر نیازهای مرتبط با ورزش)
- احتمال پیشرفت با سرعت کمتر نسبت به افراد سالم (به دلیل عوارض بیماری و داروها)
- عدم تجویز تمرین با شدت یا حجم بیش از حد به دلیل مستعد بودن بیماران برای ابتلا به عفونت های متعدد
- در صورت وجود سرگیجه، مفاصل متورم یا استفراغ بهتر است علت آن بررسی و تمرین متناسب تجویز شود.
- تنظیم شدت و نوع تمرین و استفاده از تمرینات افزایش دامنه حرکتی با توجه به احتمال خطر نوروپاتی و دیابتی
- عدم تنظیم شدت تمرینات هوازی براساس max HR به دلیل پاسخ های غیرطبیعی سیستم عصبی و سیستم غدد درون ریز
- پیچیده شدن برنامه تمرین با توجه به وجود دیس لیپیدمی، مقاومت به انسولین، چاقی، بیماری های قلبی عروقی و اختلالات استخوانی در این بیماران

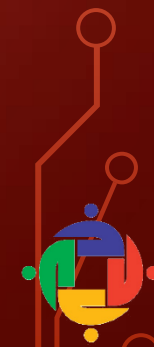


ادامه ملاحظات تجویز تمرین

- توجه به عوارض جانبی داروها در تجویز تمرین

شایع ترین عوارض جانبی مرتبط با دارو:

کرامپ های گوارشی، شکمی، حالت تهوع، استفراغ و اسهال
نوروپاتی محیطی، بی حالی، ضعف، خستگی، سمیت میتوکندری
میوپاتی، سندرم متابولیک و لیپو دیستروپی

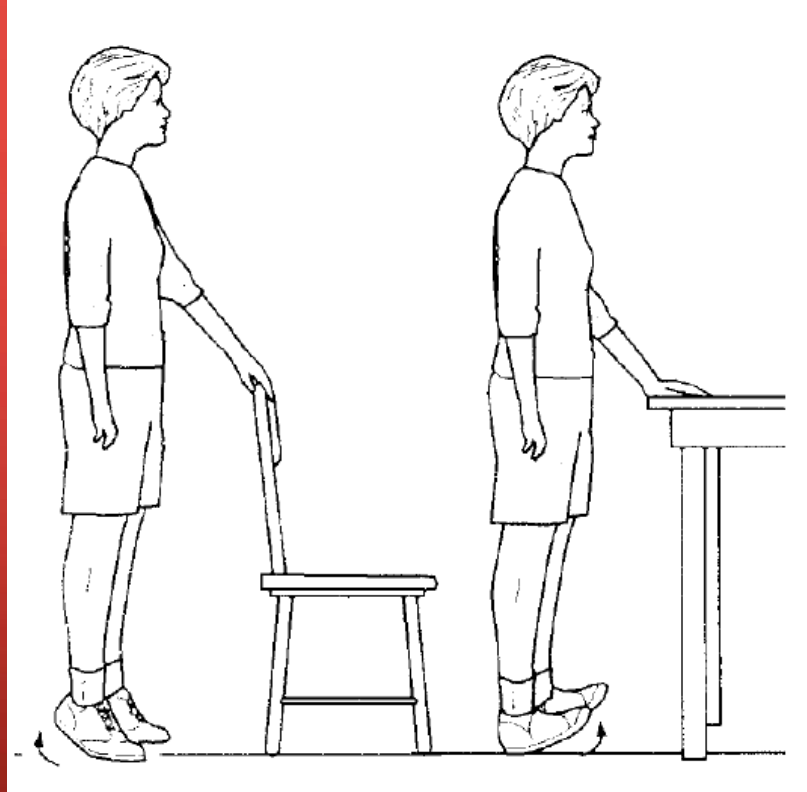


موانع مشارکت فعال

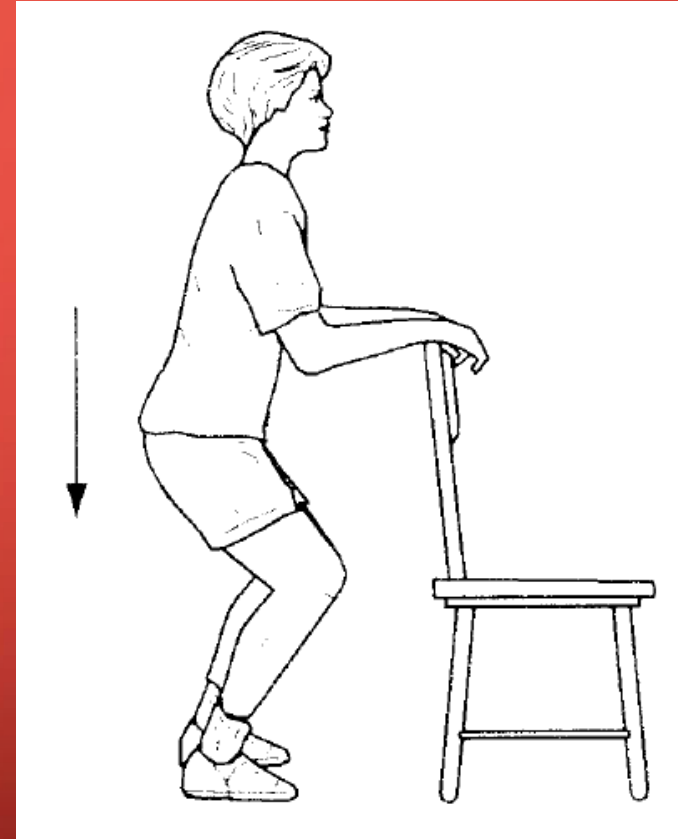
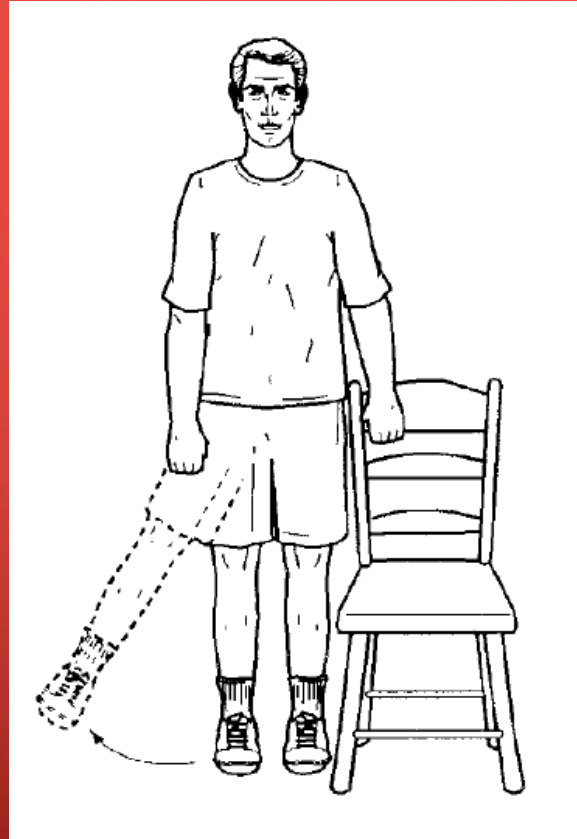
- وجود بیماری های زمینه ای متعدد، مخصوصا ایپوادیستروپی و بیماری های قلبی عروقی
- بی حالی، خستگی و افت عملکردی ناشی از خود بیماری و داروهای مصرفی
- نگرانی از دیدگاه مربی و افراد شرکت کننده در کلاس نسبت به بیماری وی
- نگرانی از افزایش بروز عفونت در اثر ورزش
- عدم آگاهی از ضرورت ورزش



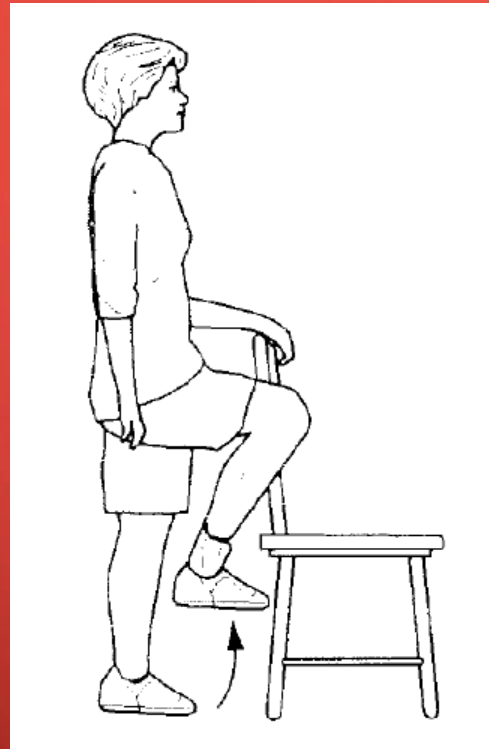
نمونه تمرین دامنه حرکتی



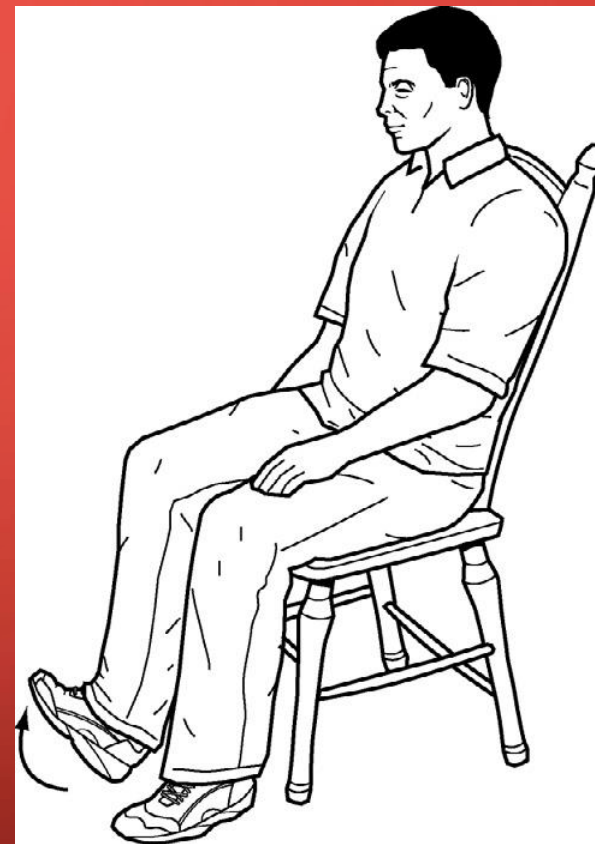
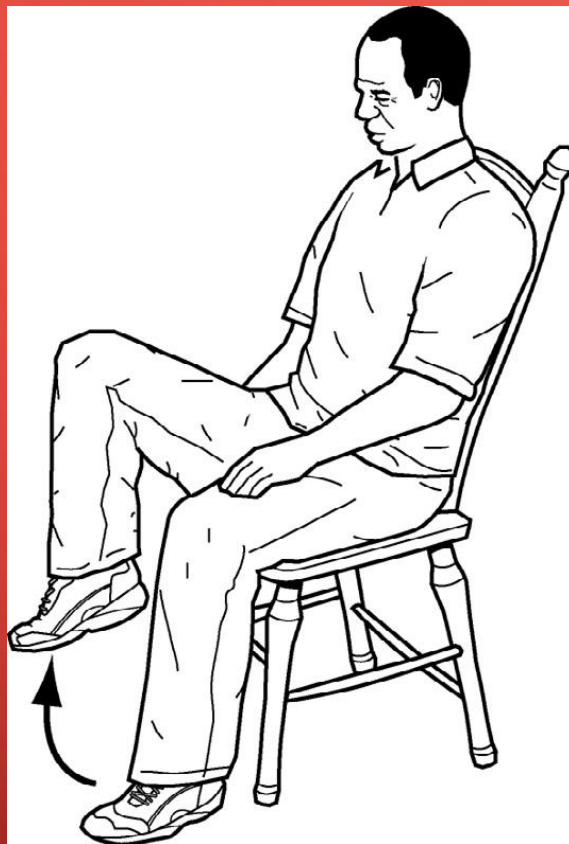
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نمونه تمرین دامنه حرکتی



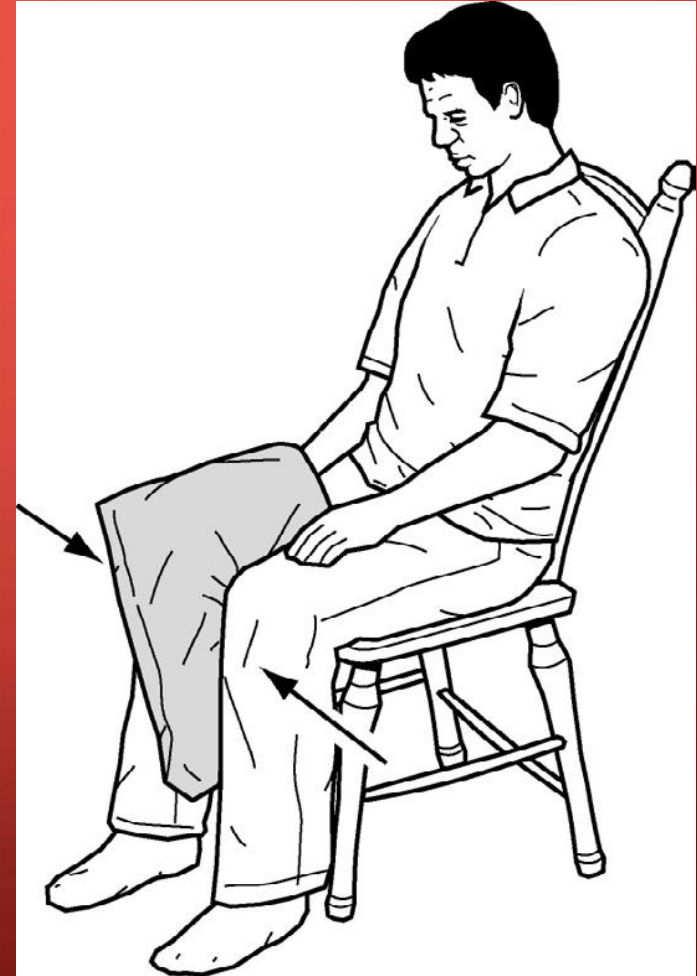
نمونه تمرین دامنه حرکتی



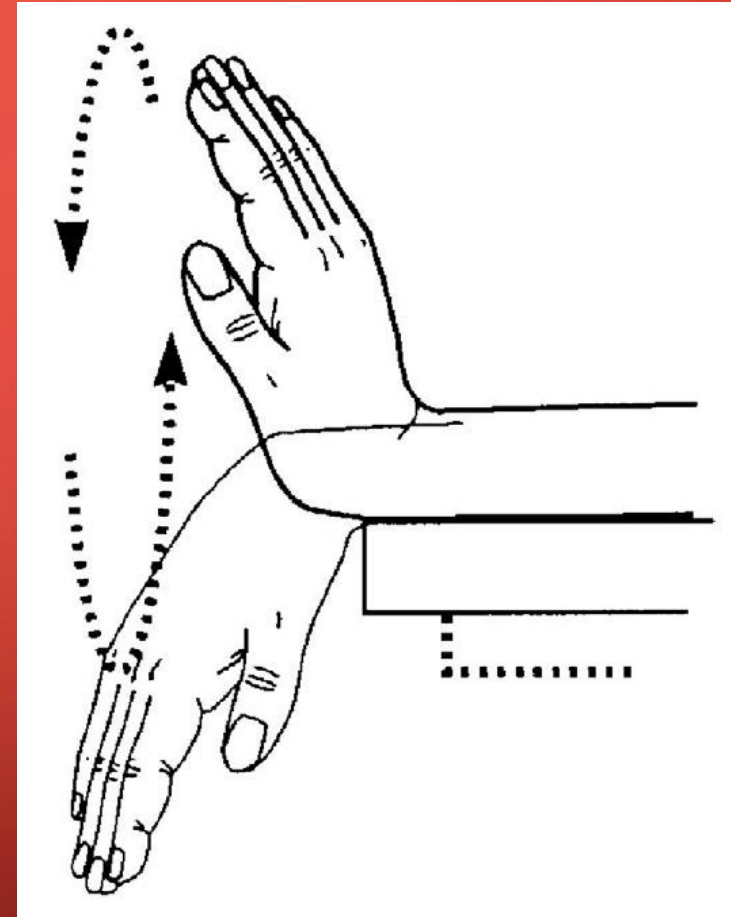
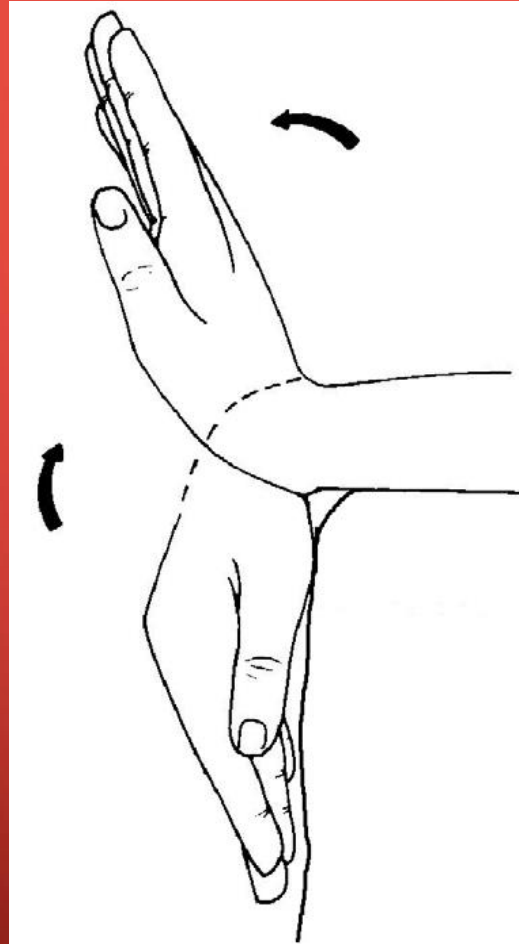
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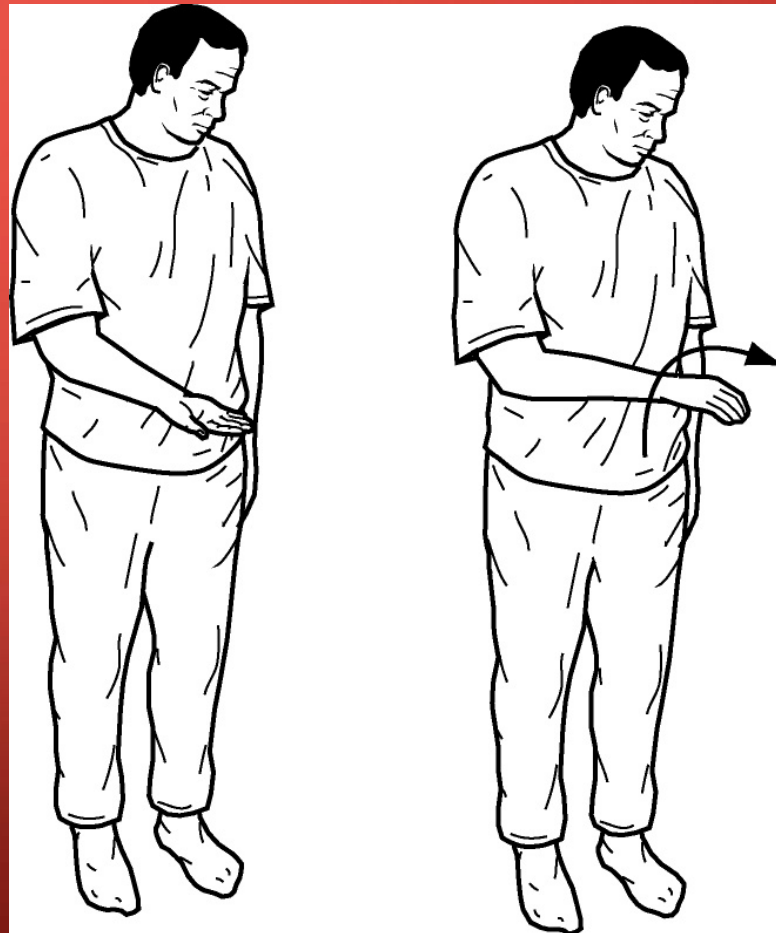
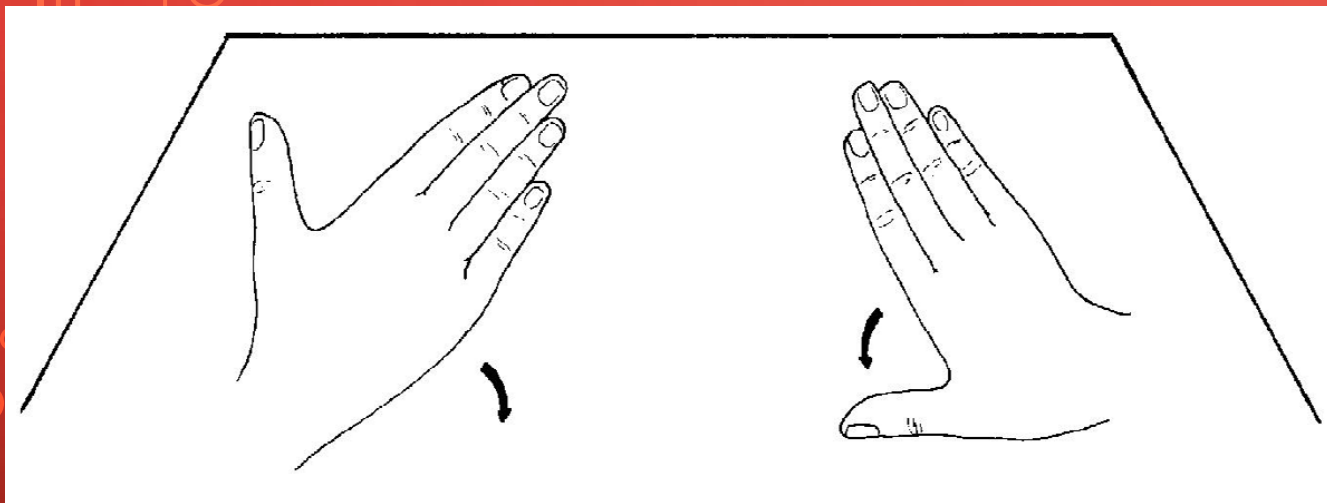
نمونه تمرین دامنه حرکتی



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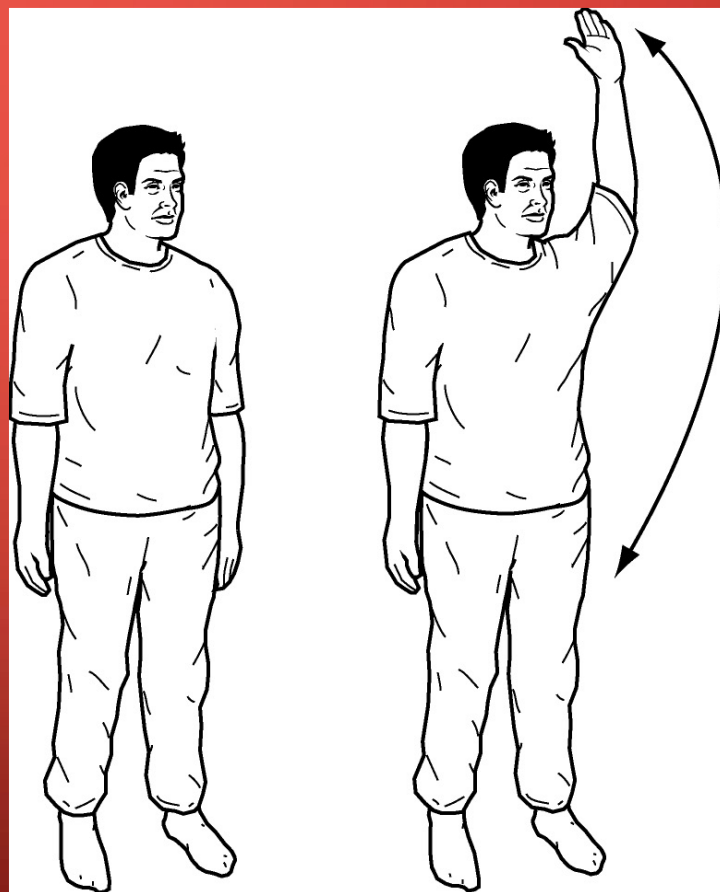
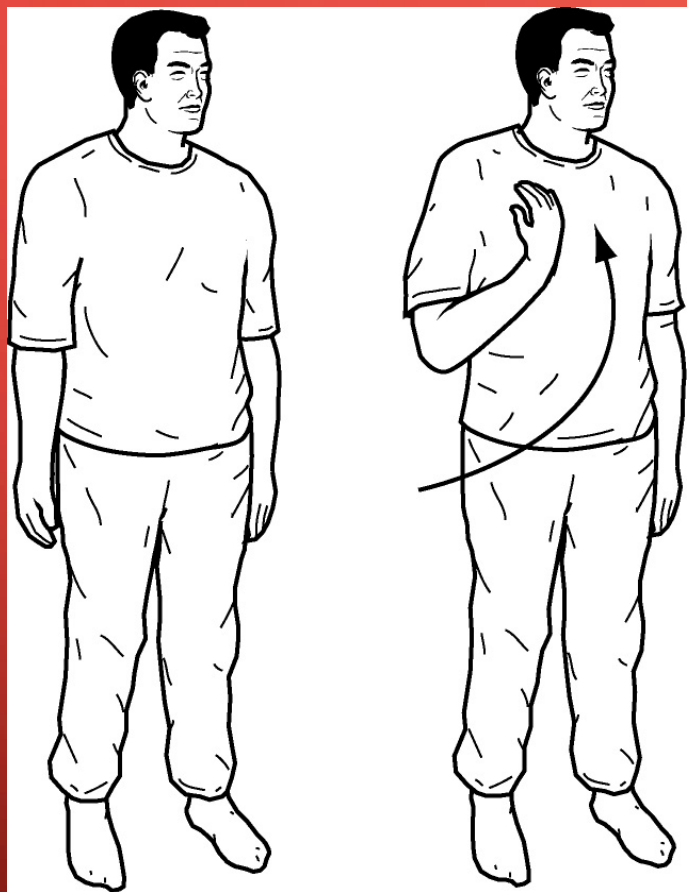
مکتب ورزشی تهران
وزارت آموزش و پرورش



نمونه تمرین دامنه حرکتی



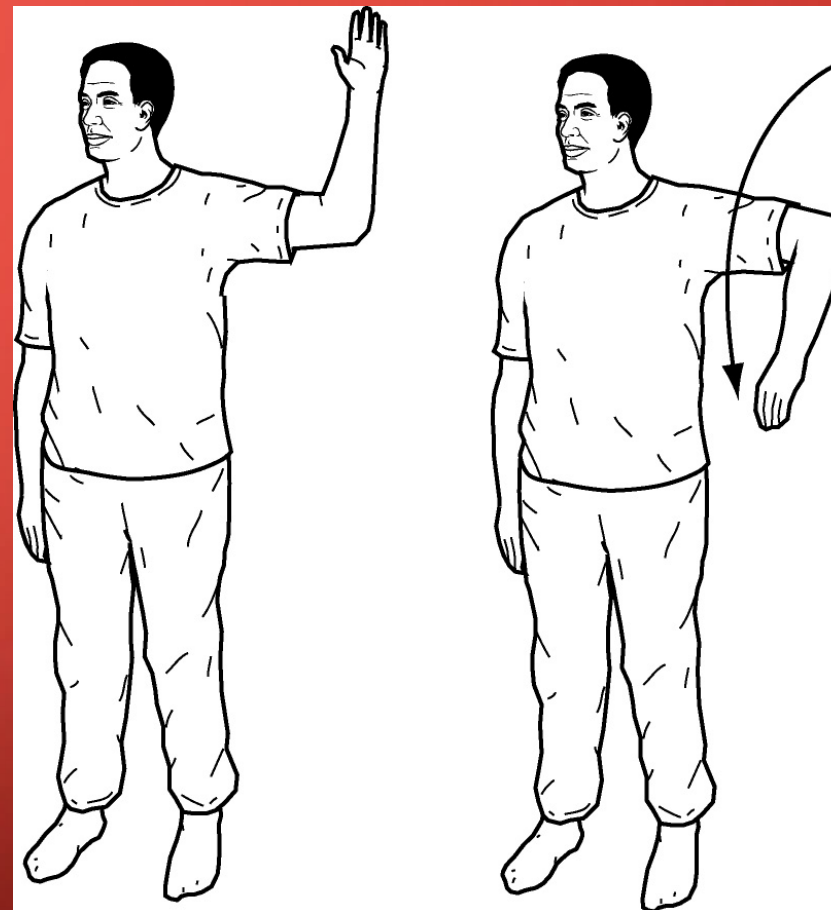
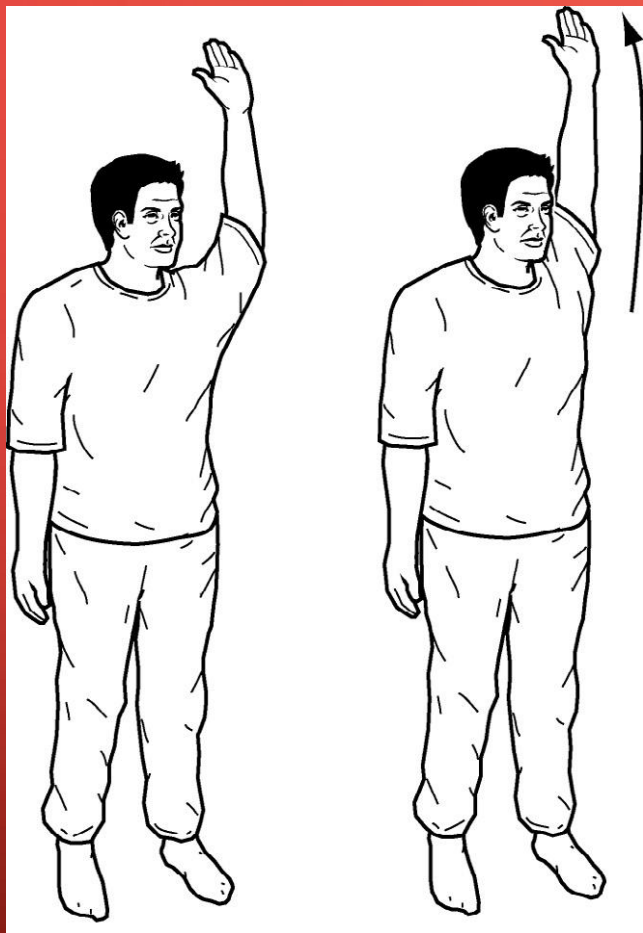
وزارت بهداشت، درمان و آموزش پزشکی
سازمان نظام پزشکی جمهوری اسلامی ایران



نمونه تمرین دامنه حرکتی



مکتب عالی تخصصی تربیت بدنی و ورزش
وزارت آموزش عالی و تحقیقات علمی





سازمان پژوهش‌ها و فناوری‌ها
وزارت آموزش عالی و تحقیقات علمی

با تشکر از توجه و همراهی شما عزیزان



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