

Corrida e Saúde Diagnóstico e Prescrição do Exercício

@hugomecagram
 @hugovpereira
 Hugo Vieira Pereira
 Hugo V. Pereira
 Hugo Meca
 sirhugomeca
 962827552



Hugo Vieira Pereira

Clinical Exercise Physiologist, Motivation & Weight Management Specialist

- PhD. Candidate FMH – ULisboa
- Invited Lecturer FEFD – ULusófona
- Post-graduation Course Coordinator & Lecturer – ULusófona & Manz
- Board Member - Portuguese Association of Exercise Physiologists
- Pg. Cardiac Rehabilitation FMH – ULisboa
- MSc. Exercise and Health FMH – ULisboa
- BSc. Sports Science FMH - ULisboa
- Certified Personal Trainer NSCA, Gray Institute (CAFS and 3DMAPS), FMS, Trigger Point and MAT-RTS
- Personal Trainer since 1996
- “Transforme-se no seu Personal Trainer” Author

43
from Santarém to Lisboa @ 18
2 Kids (12 & 3) & a dog

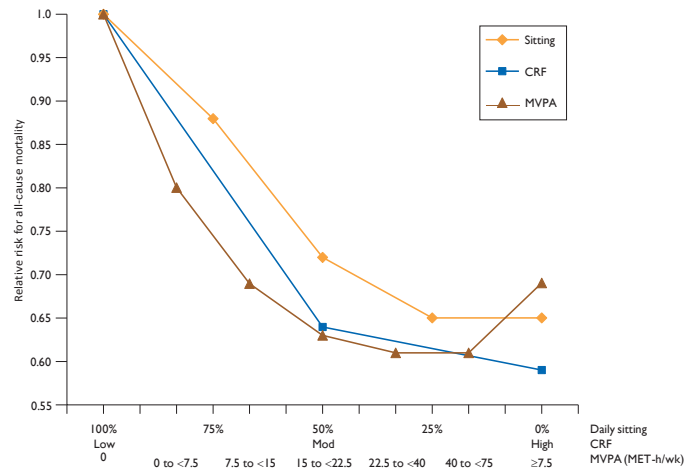
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Less Sitting, More Physical Activity, or Higher
Fitness?

Claude Bouchard, PhD; Steven N. Blair, PhD; and Peter T. Katzmarzyk, PhD



Mayo Clin Proc. 2015; 90(11).



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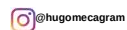


Exercise as medicine – evidence for prescribing exercise as therapy in 26 different chronic diseases

B. K. Pedersen¹, B. Saltin²

Fornece bases atualizadas e suportadas na evidência para a prescrição de exercício como terapêutica para diferentes patologias, como doenças psiquiátricas, neurológicas, metabólicas, cardiovasculares e pulmonares, bem como desordens músculo-esqueléticas e cancro.

Scand J Med Sci Sports 2015; (Suppl. 3) 25: 1–72



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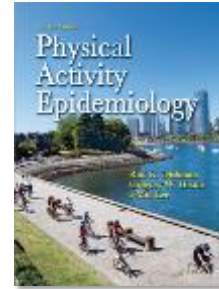
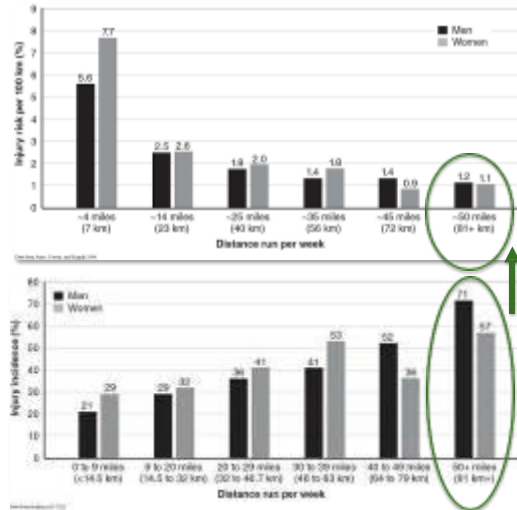
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Novo algoritmo de avaliação do risco de evento agudo durante o exercício.

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1. Alguma vez um médico lhe disse que possui um problema do coração ou hipertensão?
2. Sente dor no peito em repouso, durante as suas atividades quotidianas ou quando realiza atividade física?
3. Tende a perder o equilíbrio devido a tonturas ou teve perdas de consciência nos últimos 12 meses? (responda negativamente, se as tonturas estão associadas com respiração rápida, como durante exercício vigoroso)
4. Alguma vez lhe foi diagnosticada alguma outra condição médica além de doença cardíaca e hipertensão? Quais?
5. Encontra-se a tomar medicamentos prescritos para alguma doença crónica? Quais e para que doença?
6. Sofre (ou sofreu nos últimos 12 meses) de algum problema ósseo, articular ou nos tecidos moles (músculos, ligamentos ou tendões) que possa piorar se aumentar o seu nível de atividade física? Liste os problemas. (responda negativamente, se teve algum problema deste tipo, mas que atualmente não limite a sua capacidade de realizar atividade física)
7. O seu médico assistente indicou-lhe que apenas poderia fazer atividade física supervisionada por um médico?

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Resting Heart rate & Blood Pressure

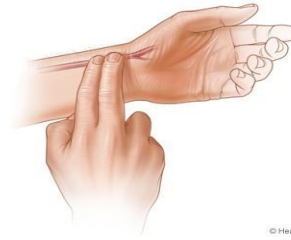
1. Patients should be seated quietly for at least 5 min in a chair with back support (rather than on an examination table) with their feet on the floor and their arms supported at heart level. Patients should refrain from smoking cigarettes or ingesting caffeine for at least 30 min preceding the measurement.
2. Measuring supine and standing values may be indicated under special circumstances.
3. Wrap cuff firmly around upper arm at heart level; align cuff with brachial artery.
4. The appropriate cuff size must be used to ensure accurate measurement. The bladder within the cuff should encircle at least 80% of the upper arm. Many adults require a large adult cuff.
5. Place stethoscope chest piece below the antecubital space over the brachial artery. Bell and diaphragm side of chest piece appear equally effective in assessing BP (15).
6. Quickly inflate cuff pressure to 20 mm Hg above first Korotkoff sound.
7. Slowly release pressure at rate equal to 2–5 mm Hg · s⁻¹.
8. SBP is the point at which the first of two or more Korotkoff sounds is heard (phase 1), and DBP is the point before the disappearance of Korotkoff sounds (phase 5).
9. At least two measurements should be made (minimum of 1 min apart) and the average should be taken.
10. BP should be measured in both arms during the first examination. Higher pressure should be used when there is consistent interarm difference.
11. Provide to patients, verbally and in writing, their specific BP numbers and BP goals.

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- The pulse may be palpated at any place that allows an artery to be compressed against a bone.
- Pressure waves generated by the heart in systole moves against the arterial wall.
- The pulse can be used as a tactile guide to determine the systolic blood pressure (diastolic not palpable).



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Classification and Management of Blood Pressure for Adults

BP Classification	SBP (mm Hg)	DBP (mm Hg)	Lifestyle Modification	Initial Drug Therapy	
				Without Compelling Indication	With Compelling Indications
Normal	<120	And <80	Encourage		
Prehypertension	120–139	Or 80–89	Yes	No antihypertensive drug indicated	Drug(s) for compelling indications ^a
Stage 1 hypertension	140–159	Or 90–99	Yes	Antihypertensive drug(s) indicated	Drug(s) for compelling indications ^a Other antihypertensive drugs, as needed
Stage 2 hypertension	≥160	Or ≥100	Yes	Antihypertensive drug(s) indicated Two-drug combination for most ^c	

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Blood Pressure Categories



BLOOD PRESSURE CATEGORY	SYSTOLIC mm Hg (upper number)		DIASTOLIC mm Hg (lower number)
NORMAL	LESS THAN 120	and	LESS THAN 80
ELEVATED	120 – 129	and	LESS THAN 80
HIGH BLOOD PRESSURE (HYPERTENSION) STAGE 1	130 – 139	or	80 – 89
HIGH BLOOD PRESSURE (HYPERTENSION) STAGE 2	140 OR HIGHER	or	90 OR HIGHER
HYPERTENSIVE CRISIS (consult your doctor immediately)	HIGHER THAN 180	and/or	HIGHER THAN 120

J Am Coll Cardiol. Sep 2017

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Body Composition

Excess body fat, particularly when located centrally around the abdomen, is associated with hypertension, metabolic syndrome, Type 2 diabetes mellitus, stroke, cardiovascular disease (CVD), and dyslipidemia.

$$\text{BMI} = \text{Weight/Height}^2$$

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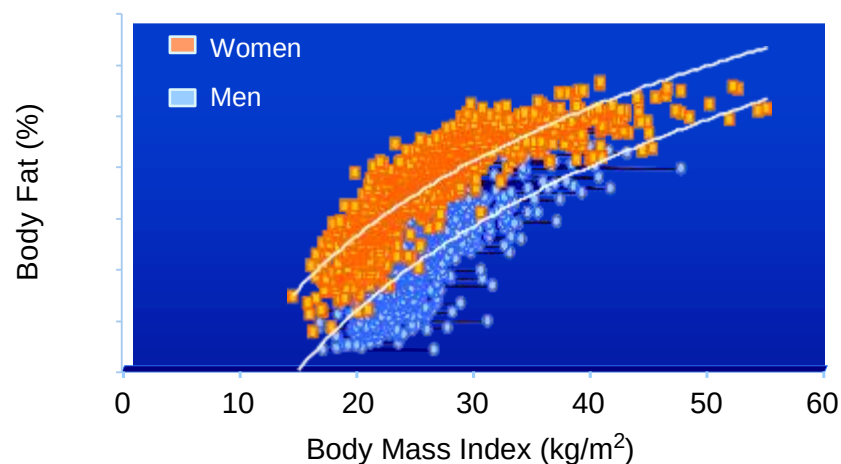


BMI or the Quetelet index is used to assess weight relative to height and is calculated by dividing body weight in kilograms by height in meters squared (kg/m^2).

BMI fails to distinguish between body fat, muscle mass, or bone. Nevertheless, an increased risk of hypertension, sleep apnea, Type 2 diabetes mellitus, certain cancers, CVD, and mortality are associated with a BMI $\geq 30.0 \text{ kg}/\text{m}^2$

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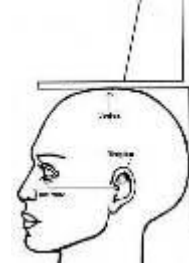
Gallagher et al. *Am J Clin Nutr* 2000;72:694.

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Height procedures

- Ensure the stabilisers attached to the rod touch the wall
- Remove shoes
- Head in the Frankfurt horizontal plane
- Standing as straight as possible
- Buttocks, shoulder blades, heels together and back of the head against the stadiometer
- Ask men to breath in deeply
- Lower the head plate and ask men to step away
- Record to the nearest of 0.1 cm on the form
- Any deviations should also be recorded



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Weight procedures

- Place scale on wooden plate on flat surface
- Check clothing, remove shoes, outer garmets, and empty pockets
- Stand with their feet centered
- Ensure that participant keeps looking ahead
- Record any problems with weight measurement

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Circumferences

The pattern of body fat distribution is recognized as an important indicator of health and prognosis. Android obesity that is characterized by more fat on the trunk (*i.e.*, abdominal fat) increases the risk of hypertension, metabolic syndrome, Type 2 diabetes mellitus, dyslipidemia, CVD, and premature death compared with individuals who demonstrate gynoid or gynecoid obesity (*i.e.*, fat distributed in the hip and thigh).

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Circumferences

Procedures

- All measurements should be made with a flexible yet inelastic tape measure.
- The tape should be placed on the skin surface without compressing the subcutaneous adipose tissue.
- If a Gulick spring-loaded handle is used, the handle should be extended to the same marking with each trial.
- Take duplicate measures at each site and retest if duplicate measurements are not within 5 mm.
- Rotate through measurement sites or allow time for skin to regain normal texture.

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Circumferences

Abdomen:	With the subject standing upright and relaxed, a horizontal measure taken at the height of the iliac crest, usually at the level of the umbilicus.
Arm:	With the subject standing erect and arms hanging freely at the sides with hands facing the thigh, a horizontal measure midway between the acromion and olecranon processes.
Buttocks/Hips:	With the subject standing erect and feet together, a horizontal measure is taken at the maximal circumference of buttocks. This measure is used for the hip measure in a waist/hip measure.

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TABLE 4.1. Classification of Disease Risk Based on Body Mass Index (BMI) and Waist Circumference

	BMI (kg · m ⁻²)	Disease Risk* Relative to Normal Weight and Waist Circumference	
		Men, ≤102 cm Women, ≤88 cm	Men, >102 cm Women, >88 cm
Underweight	<18.5	—	—
Normal	18.5–24.9	—	—
Overweight	25.0–29.9	Increased	High
Obesity, class			
I	30.0–34.9	High	Very high
II	35.0–39.9	Very high	Very high
III	≥40.0	Extremely high	Extremely high

TABLE 4.3. Risk Criteria for Waist Circumference in Adults

Risk Category	Waist Circumference cm (in)	
	Women	Men
Very low	<70 cm (<28.5 in)	<80 cm (31.5 in)
Low	70–89 (28.5–35.0)	80–99 (31.5–39.0)
High	90–110 (35.5–43.0)	100–120 (39.5–47.0)
Very high	>110 (>43.0)	>120 (>47.0)

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Handgrip Strenght

Box 4.6 Static Handgrip Strength Test Procedures

1. Adjust the grip bar so the second joint of the fingers fits snugly under the handle and takes the weight of the instrument. Set the dynamometer to zero.
2. The subject holds the handgrip dynamometer in line with the forearm at the level of the thigh, away from the body.
3. The subject squeezes the handgrip dynamometer as hard as possible without holding the breath (to avoid the Valsalva maneuver). Neither the hand nor the handgrip dynamometer should touch the body or any other object.
4. Repeat the test twice with each hand. The score is the highest of the two readings (to the nearest kilogram) for each hand added together.

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TABLE 4.8

Fitness Categories for Grip Strength^a by Sex and Age

Gender	M	F	M	F	M	F
Age (yr)	15–19		20–29		30–39	
Excellent	≥108	≥68	≥115	≥70	≥115	≥71
Very Good	98–107	60–67	104–114	63–69	104–114	63–70
Good	90–97	53–59	95–103	58–62	95–103	58–62
Fair	79–89	48–52	84–94	52–57	84–94	51–57
Poor	≤78	≤47	≤83	≤51	≤83	≤50
Age (yr)	40–49		50–59		60–69	
Excellent	≥108	≥69	≥101	≥61	≥100	≥54
Very Good	97–107	61–68	92–100	54–60	91–99	48–53
Good	88–96	54–60	84–91	49–53	84–90	45–47
Fair	80–87	49–53	76–83	45–48	73–83	41–44
Poor	≤79	≤48	≤75	≤44	≤72	≤40

^aNorms use a combined score for the left and right hands.

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Relative Muscle Endurance

PUSH-UP

1. The push-up test is administered with men starting in the standard "down" position (hands pointing forward and under the shoulder, back straight, head up, using the toes as the pivotal point) and women in the modified "knee push-up" position (legs together, lower leg in contact with mat with ankles plantar-flexed, back straight, hands shoulder width apart, head up, using the knees as the pivotal point).
2. The client/patient must raise the body by straightening the elbows and return to the "down" position, until the chin touches the mat. The stomach should not touch the mat.
3. For both men and women, the subject's back must be straight at all times and the subject must push up to a straight arm position.
4. The maximal number of push-ups performed consecutively without rest is counted as the score.
5. The test is stopped when the client strains forcibly or unable to maintain the appropriate technique within two repetitions.

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TABLE 4.12. Fitness Categories for the Push-Up by Age and Sex

Category	Age (year)									
	20-29		30-39		40-49		50-59		60-69	
Sex	M	W	M	W	M	W	M	W	M	W
Excellent	36	30	30	27	25	24	21	21	18	17
Very good	35	29	29	26	24	23	20	20	17	16
	29	21	22	20	17	15	13	11	11	12
Good	28	20	21	19	16	14	12	10	10	11
	22	15	17	13	13	11	10	7	8	5
Fair	21	14	16	12	12	10	9	6	7	4
	17	10	12	8	10	6	7	2	5	2
Needs improvement	16	9	11	7	9	4	6	1	4	1

M, men; W, women.
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Relative Muscle Endurance

CURL-UP (CRUNCH)*

- Two strips of masking tape are to be placed on a mat on the floor at a distance of 12 cm apart (for clients/patients <45 yr) or 8 cm apart (for clients/patients ≥45 yr).
- Subjects are to lie in a supine position across the tape, knees bent at 90° with feet on the floor and arms extended to their sides, such that their fingertips touch the nearest strip. This is the bottom position. To reach the top position, subjects are to flex their spines to 30°, reaching their hands forward until their fingers touch the second strip of tape.
- A metronome is to be set at 40 beats · min⁻¹. At the first beep, the subject begins the curl-up, reaching the top position at the second beep, returning to the starting position at the third, top position at the fourth, etc.
- Repetitions are counted each time the subject reaches the bottom position. The test is concluded either when the subject reaches 75 curl-ups, or the cadence is broken.
- Every subject will be allowed several practice repetitions prior to the start of the test.

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TABLE 4.13. Fitness Categories for the Partial Curl-Up by Age and Sex

Percentile		Age (year)									
		20-29		30-39		40-49		50-59		60-69	
Gender		M	W	M	W	M	W	M	W	M	W
90	Well above average	75	70	75	55	75	55	74	48	53	50
80	Above average	58	45	69	43	75	42	60	30	33	30
70		41	37	46	34	67	33	45	23	26	24
60	Average	31	32	36	28	51	28	35	16	19	19
50		27	27	31	21	39	25	27	9	16	13
40	Below average	24	21	26	15	31	20	23	2	9	9
30		20	17	19	12	26	14	19	0	6	3
20	Well below average	13	12	13	0	21	5	13	0	0	0
10		4	5	0	0	13	0	0	0	0	0

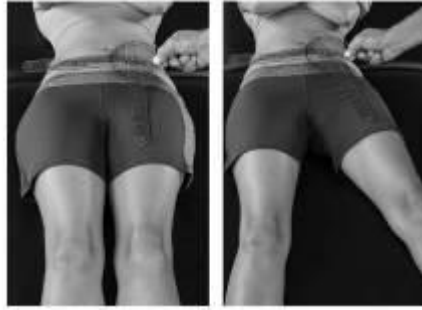
M, men; W, women.
Adapted from (37).

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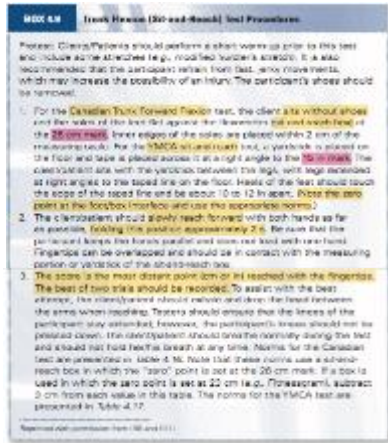
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TABLE 6.3. Range of Motion of Select Single Joint Movements in Degrees			
		Degrees	Degrees
Shoulder Girdle Movement			
Flexion	90–120	Extension	20–80
Abduction	80–100		
Horizontal abduction	30–45	Horizontal adduction	90–135
Medial rotation	70–90	Lateral rotation	70–90
Elbow Movement			
Flexion	130–160		
Supination	75–90	Pronation	75–90
Trunk Movement			
Flexion	120–150	Extension	20–45
Lateral flexion	10–35	Rotation	20–40
Hip Movement			
Flexion	90–135	Extension	10–30
Abduction	30–50	Adduction	10–30
Medial rotation	30–45	Lateral rotation	45–60
Knee Movement			
Flexion	130–140	Extension	5–10
Ankle Movement			
Dorsiflexion	15–20	Plantarflexion	30–50
Inversion	10–30	Eversion	10–20

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YMCA sit-and-reach

Marca 15"
Calcanhares 10-12" afastados



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TABLE 4.16. Fitness Categories for Trunk Forward Flexion Using a Sit-and-Reach Box (cm)* by Age and Sex

Category	Age (year)									
	20-29		30-39		40-49		50-59		60-69	
Sex	M	W	M	W	M	W	M	W	M	W
Excellent	40	41	38	41	35	38	35	39	33	35
Very good	39	40	37	40	34	37	34	38	32	34
	34	37	33	36	29	34	28	33	25	31
Good	33	36	32	35	28	33	27	32	24	30
	30	33	28	32	24	30	24	30	20	27
Fair	29	32	27	31	23	29	23	29	19	26
	25	28	23	27	18	25	16	25	15	23
Needs improvement	24	27	22	26	17	24	15	24	14	22

*These norms are based on a sit-and-reach box in which the "zero" point is set at 26 cm. When using a box in which the zero point is set at 23 cm, subtract 3 cm from each value in this table.

M, men; W, women.

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The objective of the **Cooper 12- min test** is to cover the greatest distance in the allotted time period and for the 1.5-mi (2.4 km) test to cover the distance in the shortest period of time.

$$VO_{2max} (mL \cdot kg^{-1} \cdot min^{-1}) = (distance \text{ in meters} + 504.9) / 44.73$$

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TABLE 4.7
Cardiorespiratory Fitness Classifications (VO_{2max}) by Age and Sex

$\dot{V}O_{2max}$ ($mL \cdot O_2 \cdot kg^{-1} \cdot min^{-1}$)

		MEN				
		Age Group (yr)				
Percentile		20-29	30-39	40-49	50-59	60-69
95	Superior	66.3	59.8	55.6	50.7	43.0
90		61.8	56.5	52.1	45.6	40.3
85	Excellent	59.3	54.2	49.3	43.2	38.2
80		57.1	51.6	46.7	41.2	36.1
75		55.2	49.2	45.0	39.7	34.5
70	Good	53.7	48.0	43.9	38.2	32.9
65		52.1	46.6	42.1	36.3	31.6
60		50.2	45.2	40.3	35.1	30.5
55		49.0	43.8	38.9	33.8	29.1
50	Fair	48.0	42.4	37.8	32.6	28.2
45		46.5	41.3	36.7	31.6	27.2
40		44.9	39.6	35.7	30.7	26.6
35		43.5	38.5	34.6	29.5	25.7
30	Poor	41.9	37.4	33.3	28.4	24.6
25		40.1	35.9	31.9	27.1	23.7
20		38.1	34.1	30.5	26.1	22.4
15		35.4	32.7	29.0	24.4	21.2
10	Very poor	32.1	30.2	26.8	22.8	19.8
5		29.0	27.2	24.2	20.9	17.4
		(n = 513)	(n = 963)	(n = 1,327)	(n = 1,078)	(n = 593)

TABLE 4.7
Cardiorespiratory Fitness Classifications (VO_{2max}) by Age and Sex

$\dot{V}O_{2max}$ ($mL \cdot O_2 \cdot kg^{-1} \cdot min^{-1}$)

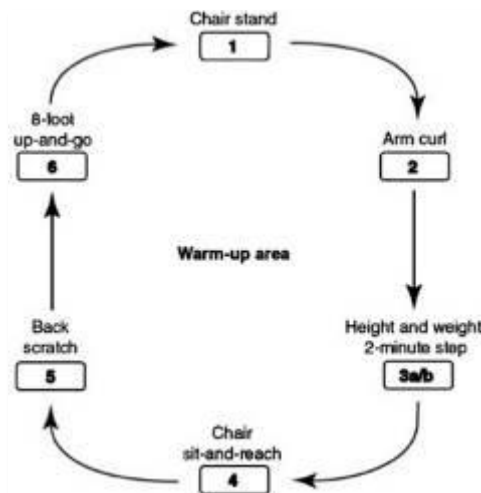
		WOMEN				
		Age Group (yr)				
Percentile		20-29	30-39	40-49	50-59	60-69
95	Superior	56.0	45.8	41.7	35.9	29.4
90		51.3	41.4	38.4	32.0	27.0
85	Excellent	48.3	39.3	36.0	30.2	25.6
80		46.5	37.5	34.0	28.6	24.6
75		44.7	36.1	32.4	27.6	23.8
70	Good	43.2	34.6	31.1	26.8	23.1
65		41.6	33.5	30.0	26.0	22.0
60		40.6	32.2	28.7	25.2	21.2
55		38.9	31.2	27.7	24.4	20.5
50	Fair	37.6	30.2	26.7	23.4	20.0
45		35.9	29.3	25.9	22.7	19.6
40		34.6	28.2	24.9	21.8	18.9
35		33.6	27.4	24.1	21.2	18.4
30	Poor	32.0	26.4	23.3	20.6	17.9
25		30.5	25.3	22.1	19.9	17.2
20		28.6	24.1	21.3	19.1	16.5
15		26.2	22.5	20.0	18.3	15.6
10	Very poor	23.9	20.9	18.8	17.3	14.6
5		21.7	19.0	17.0	16.0	13.4
		(n = 410)	(n = 608)	(n = 843)	(n = 805)	(n = 408)

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Senior Fitness Test



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Estatura e Peso

OBJETIVO: determinar o Índice de Massa Corporal (IMC)

EQUIPAMENTO: balança; estadiómetro de parede ou craveira

PROCEDIMENTOS: semelhantes aos apresentados na aula de Avaliação Física

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PROGRAMA NACIONAL
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Levantar e sentar de uma cadeira durante 30 segundos

OBJETIVO: avaliação da força dos membros inferiores

EQUIPAMENTO: cronómetro; cadeira com 43 cm de altura

PROCEDIMENTOS: cadeira encostada a uma parede; o teste começa com o participante sentado e com os braços juntos ao peito; levantar até à posição bípede máxima e sentar até à posição em que estiver completamente sentado; registar o número de execuções em 30 segundos (no final do teste, se o participante estiver a meio de uma elevação esta deve ser considerada)

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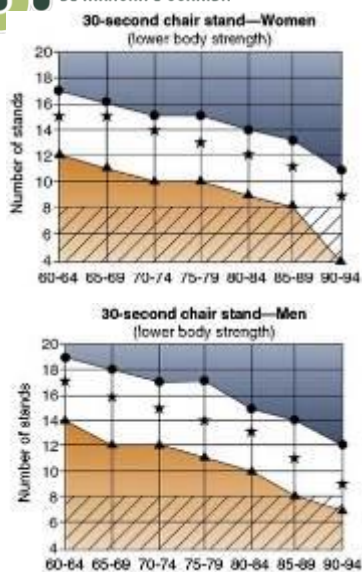
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Flexões do cotovelo durante 30 segundos

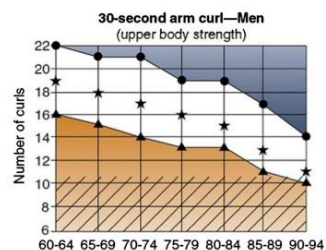
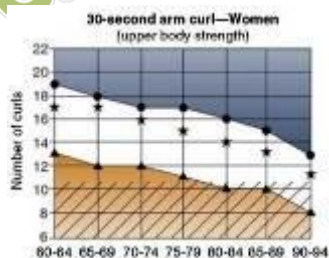
OBJETIVO: avaliação da força dos membros superiores

EQUIPAMENTO: cronómetro; cadeira; halter (2,5 kg – mulheres; 3,5 kg – homens)

PROCEDIMENTOS: participante sentado na cadeira, com o lado dominante encostado ao bordo da cadeira; halter na mão dominante com o cotovelo em extensão; ao sinal iniciar, realizar a flexão completa do cotovelo (participante deve rodar gradualmente a mão durante a flexão); registar o número de execuções em 30 segundos (no final do teste, se o participante estiver a meio de uma flexão esta deve ser considerada).



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■ Above average

□ Normal range

■ Below average

→ 75th percentile

→ 25th percentile

★ Low functioning*

* Functional fitness standards
(criterion scores associated with maintaining mobility and physical independence until late in life despite age-related declines)



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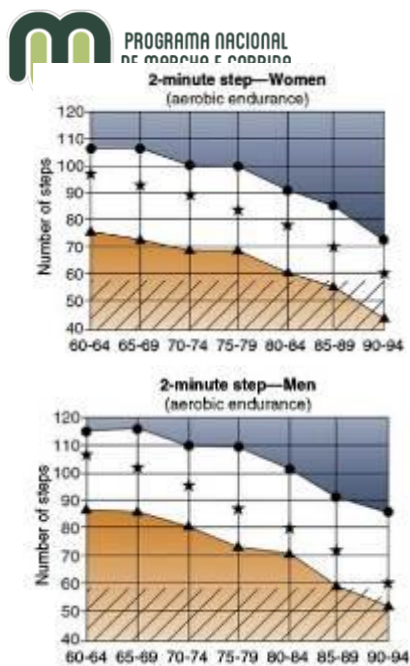
Passos no mesmo local durante 2 minutos

OBJETIVO: teste alternativo para a avaliação da aptidão aeróbia

EQUIPAMENTO: cronómetro; fita métrica

PROCEDIMENTOS: marcar a meia distancia entre a rótula e a crista ilíaca; registar o número de elevações do joelho direito que, durante os 2 minutos, atinjam essa altura

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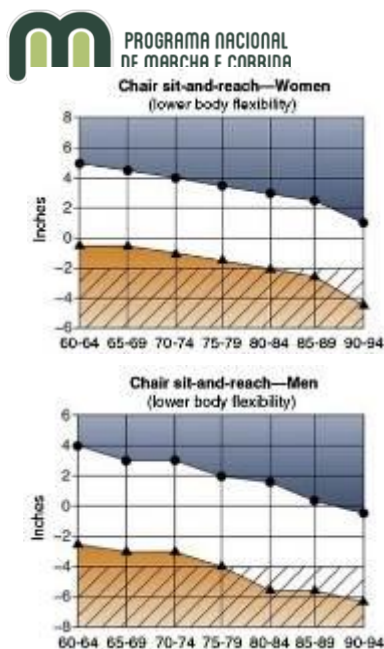
Alcançar sentado

OBJETIVO: avaliação da flexibilidade/mobilidade do tronco e membros inferiores

EQUIPAMENTO: cadeira com 43 cm; régua

PROCEDIMENTOS: cadeira encostada a uma parede; o participante senta-se no bordo da cadeira com um membro inferior ligeiramente fletido e apoiado no solo; o outro membro inferior deve estar totalmente estendido, com o calcanhar a tocar o solo e o pé a formar um ângulo de 90° com a perna; movimento deve ser realizado lentamente deslizando as mãos sobrepostas ao longo da perna (dedos médios alinhados); a posição final deve ser mantida durante 2 s; registar a distância até ao dedo grande do pé (zero) ou a distância que consegue alcançar para além deste (no membro inferior com melhor resultado)

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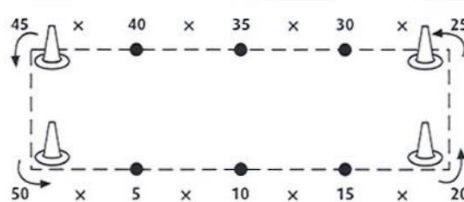


Andar durante 6 minutos

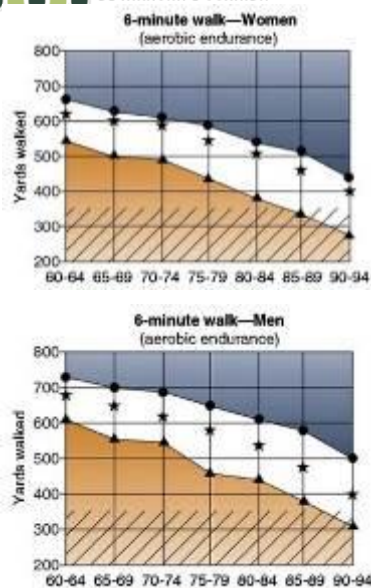
OBJETIVO: avaliação da aptidão aeróbia

EQUIPAMENTO: cronómetro; fita métrica; cones

PROCEDIMENTOS: registar a distância percorrida durante os 6 minutos



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■ Above average
 □ Normal range
 ■ Below average
 ◆ 75th percentile
 ◆ 25th percentile
 ☑ Low functioning*
 * Functional fitness standards
 (criterion scores associated with
 maintaining mobility and physical
 independence until late in life
 despite age-related declines)

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Alcançar atrás das costas

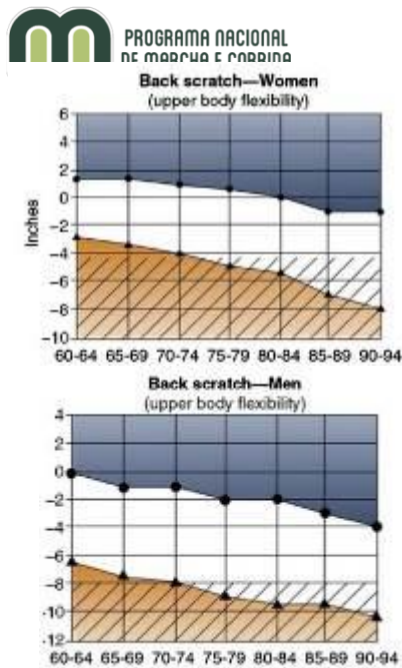


OBJETIVO: avaliação da flexibilidade/mobilidade dos ombros

EQUIPAMENTO: régua

PROCEDIMENTOS: em pé, o participante coloca a mão dominante por cima do mesmo ombro tentando com a outra tocar o dedo médio da mão; a posição final deve ser mantida durante 2 s; registar a distância entre a ponta dos dedos médios de cada mão; os resultados negativos representam a distância mais curta entre os dedos médios; os resultados positivos representam a medida da sobreposição dos dedos médios

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Sentado, caminhar 2,44 m e voltar a sentar



OBJETIVO: avaliação da agilidade e estabilidade dinâmica

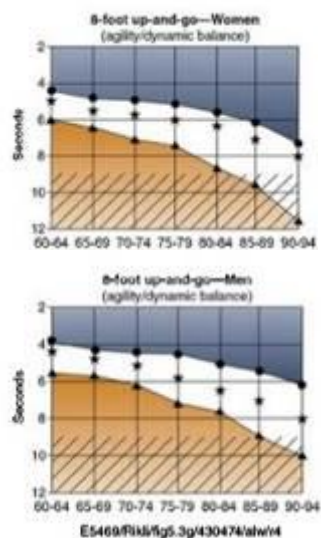
EQUIPAMENTO: cronómetro; cadeira com 43 cm de altura; fita métrica; cone

PROCEDIMENTOS: cadeira encostada a uma parede; o teste começa com o participante sentado; ao sinal de partida caminha o mais rapidamente possível, contorna o cone (colocado a 2,4 m da cadeira) e regressa à posição inicial (sentado); deve realizar-se duas vezes o teste sendo que o melhor resultado é utilizado para medir o desempenho

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TABLE 5.5 SFT Scores (Criterion Fitness Standards) Associated With Maintaining Functional Mobility and Physical Independence

Test	AGE GROUPS						
	60-64	65-69	70-74	75-79	80-84	85-89	90-94
Chair stand (# in 30 sec)							
Women	15	15	14	13	12	11	9
Men	17	16	15	14	13	11	9
Arm curl (# in 30 sec)							
Women	17	17	16	15	14	13	11
Men	19	18	17	16	15	13	11
6-minute walk (# of yd)							
Women	625	605	580	550	510	460	400
Men	680	650	620	580	530	470	400
2-minute step (# of steps)							
Women	97	93	89	84	78	70	60
Men	106	101	95	88	80	71	60
8-foot up-and-go (sec)							
Women	5.0	5.3	5.6	6.0	6.5	7.1	8.0
Men	4.8	5.1	5.5	5.9	6.4	7.1	8.0



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ENVELHECIMENTO ATIVO
APTIDÃO FÍSICA FUNCIONAL
QUAL A SUA APTIDÃO FÍSICA?
RECOMENDAÇÕES
NOTÍCIAS

Aptidão Física Funcional e Independência Física Projetada para os 90 Anos

A sua aptidão física atual está relacionada com o risco de não ser independente nas atividades da vida diária.

Estas atividades incluem tarefas básicas da vida diária que podem ir desde a capacidade para ir sozinho às compras, ou mesmo cuidar de si (exemplo, tomar banho e vestir-se sozinho e sem ajuda).

FAÇA JÁ O TESTE

<http://envelhecimento.dglab.pt/aptidao-fisica-funcional/>

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Princípios do Treino

- Princípio da Sobrecarga
- Princípio da Variabilidade
- Princípio da Individualização
- Princípio da Especificidade

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Sobrecarga

Manipulando:

- ✓ Carga
- ✓ Número de repetições
- ✓ Número de séries
- ✓ Velocidade de execução
- ✓ Complexidade do exercício
- ✓ Intervalo de recuperação



VOLUME
INTENSIDADE

PERIODIZAÇÃO

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Variabilidade

Manipulando:

- ✓ Carga
- ✓ Amplitude do movimento
- ✓ Número de repetições
- ✓ Número de séries
- ✓ Velocidade de execução
- ✓ Complexidade do exercício
- ✓ Intervalo de recuperação



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Individualização

Adequando as componentes estruturais dos exercícios (intensidade, volume, complexidade do exercício) às capacidades individuais do praticante (físicas, psicológicas e sociais).

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Especificidade

O tipo de exercício influencia sistemas e estruturas específicas:

- ✓ fonte energética
- ✓ padrão de movimento
- ✓ amplitude do movimento
- ✓ plano do movimento

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Periodização

“Planeamento do treino a longo termo, assim como as suas variações operadas em intervalos de tempo definidos, tem como intenção otimizar ganhos de força, potência, desempenho motor e/ou hipertrofia muscular.”

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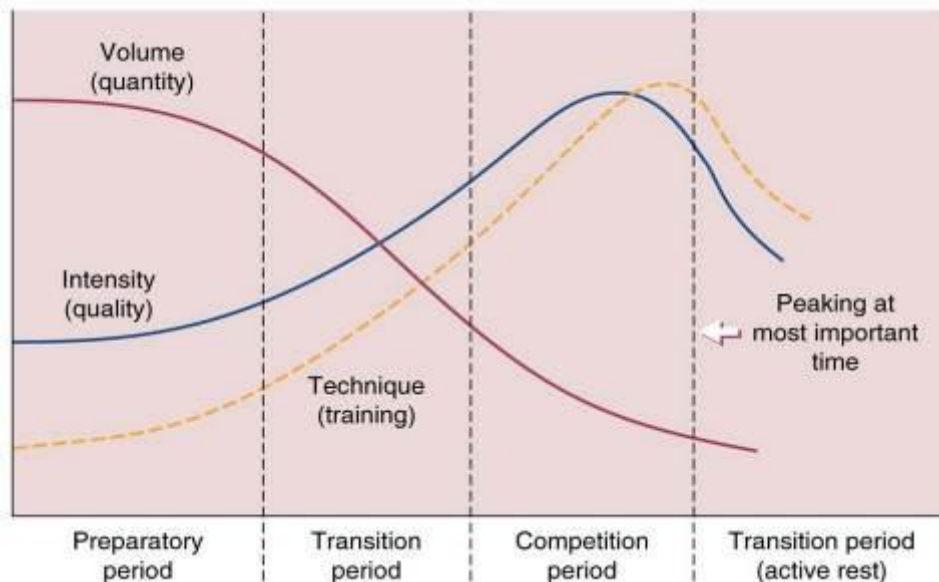
Periodização do treino

Planeamento do treino a longo termo, assim como as suas variações operadas em intervalos de tempo definidos, tem como intenção otimizar ganhos de força, potência, desempenho motor e/ ou hipertrofia muscular e prevenir o overtraining.

Intensidade
Volume
Densidade

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Kraemer, W.; Fleck, S.; (2007). Optimizing Strength Training: Designing Nonlinear Periodization Workouts. H. KineNcs.



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Periodização Anual

- ✓ Sessão de treino – grupo de exercícios
- ✓ Dia de treino – uma/várias sessões de treino
- ü Semana de treino – uma semana de treino
- ü Ciclo de treino – várias semanas de treino
- ✓ Bloco de treino = vários ciclos de treino
- ✓ Ano de treino = vários blocos de treino

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PLANEAMENTO ANUAL

- ✓ É o grande quadro (conjunto de vários blocos)
- ✓ Corresponde ao ano civil mas pode ser considerado outro espaço temporal

“Onde estamos e para onde quero ir?”

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Métodos de Treino Aeróbio

Tipo de treino	Frequência	Duração	Intensidade
Contínuo extensivo	1 a 2	30 a 120 minutos	Cerca de 70% $Vo_2máx$
Contínuo intensivo	1 a 2	20 a 30 minutos	Limiar aeróbio ou ligeiramente acima
Intervalado	1 a 2	3 a 5 minutos (1 exercício: 1 repouso)	Próximo do $Vo_2máx$
HIIT	1	30 a 90 segundos (1:0,5 a 1:5)	Acima do $Vo_2máx$
Fartlek	1	20 a 60 minutos	70 a 80% $Vo_2máx$.

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TABLE 6.2
Commonly Used Equations for Estimating Maximal Heart Rate

Author	Equation	Population
Fox et al. (35)	$HR_{max} = 220 - \text{age}$	Small group of men and women
Astrand (8)	$HR_{max} = 216.6 - (0.84 \times \text{age})$	Men and women age 4–34 yr
Tanaka et al. (101)	$HR_{max} = 208 - (0.7 \times \text{age})$	Healthy men and women
Gellish et al. (38)	$HR_{max} = 207 - (0.7 \times \text{age})$	Men and women participants in an adult fitness program with broad range of age and fitness levels
Gulati et al. (47)	$HR_{max} = 206 - (0.88 \times \text{age})$	Asymptomatic middle-aged women referred for stress testing

HR_{max} , maximal heart rate.

$$F_{ctreino} = (F_{creserva}) \times \text{Intensidade} + F_{crepouso}$$

$$F_{creserva} = F_{cmáximateórica} - F_{crepouso}$$

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Auditório das Piscinas do Jamor
20 e 21 de Outubro



Corrida e Saúde Diagnóstico e Prescrição do Exercício

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