SOCIETÀ ITALIANA
G.U.I.D.A.
PER LA GESTIONE UNIFICATA E INTERDISCIPLINARE DEL DOLORE MUSCOLO-SCHELETRICO E DELL'ALGODISTROFIA

IV CONGRESSO NAZIONALE

IL PATIENT-JOURNEY DELLA PERSONA CON DOLORE MUSCOLO-SCHELETRICO O CON ALGODISTROFIA

Marco A. Minetto

LA PERSONA CON ARTROSI: CLASSIFICAZIONE FENOTIPICA

UNIVERSITA' DI TORINO
Divisione Universitaria Medicina Fisica e Riabilitativa

DIPARTIMENTO di SCIENZE CHIRURGICHE

Centro Congressi Unione Industriali
TORINO 11-13 MAGGIO 2023

Archives of Physical Medicine and Rehabilitation 2017;98:795-803

ACRM
AMERICAN CONGRESS OF REHABILITATION MEDICINE

Rehabilitation Research at the National Institutes of Health: Moving the Field Forward (Executive Summary)

HOW WHICH INTERVENTIONS ARE DOING WHAT IN WHOM

Precision medicine is (also) proper scheduling (timing)

TERAPIA INFILTRATIVA: PERCHÉ?

Tre possibili 'scopi' nel percorso riabilitativo:

- diagnostico
- terapeutico
- propedeutico

Procedural targeting
Procedural timing

Griffin

LA TERAPIA INFILTRATIVA

PROF. ANTONIO FRIZZIERO

CAPITOLO 1

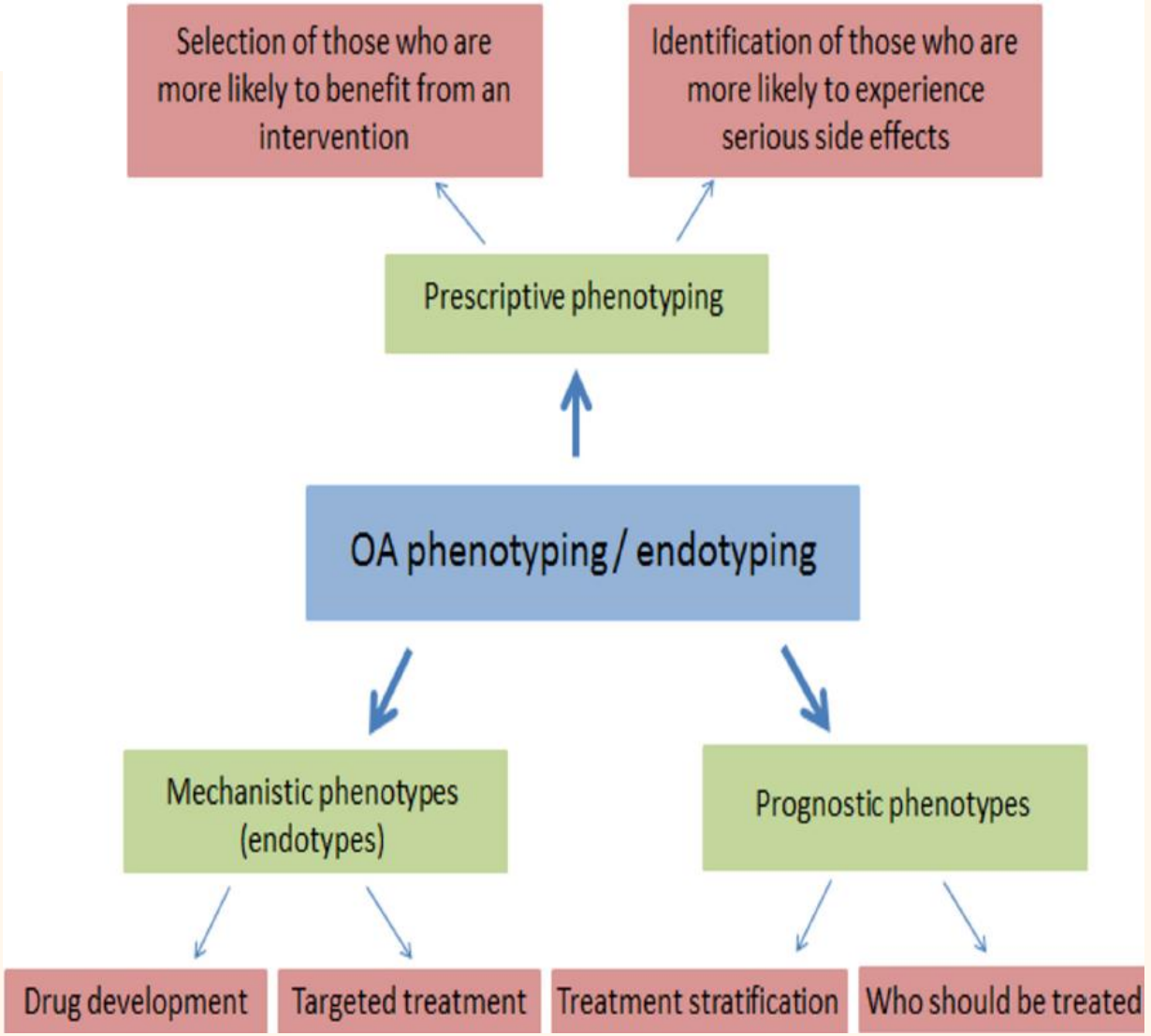
VANTAGGI DELLA TERAPIA INFILTRATIVA IN AMBITO RIABILITATIVO

Marco A. Minetto
Chiara Busso
Giuseppe Massazza

Phenotypes of osteoarthritis - current state and future implications

Deveza et al.

Clin Exp Rheumatol. 2019



- Genetics
- Joint overuse & gait mechanics
- Inflammation (systemic and/or local)**
- Hormonal factors*
- Muscle strength
- Number of joints affected*
- Race/ethnicity
- Pain sensitization
- Joint tissues affected*
- Rate of progression**
- Socioeconomic status
- Function
- Stage of disease**
- Joint tissue metabolism**
- Bone density*
- Presence of erosions or calcification*

*Potentially defined by imaging
*Potentially defined by biochemical markers

AGENDA

- Pain sensitization
- Function
- Muscle strength

- ❑ DOLORE
- ❑ SOMATOTIPO E COMPOSIZIONE CORPOREA
- ❑ INIBIZIONE MUSCOLARE ARTROGENICA

AGENDA

- **DOLORE**
- **SOMATOTIPO E COMPOSIZIONE CORPOREA**
- **INIBIZIONE MUSCOLARE ARTROGENICA**

IV CONGRESSO NAZIONALE

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CORSO DI ALTA FORMAZIONE

INNOVATIONS IN LOW BACK PAIN

12-13 novembre 2021

LA SCUOLA DEL MAL DI SCHIENA

Torino, 17-18 febbraio 2023

cializzazione in Medicina Fisica e Riabilitativa
ell'Università degli Studi di Torino

DIPARTIMENTO di SCIENZE CHIRURGICHE

e: Prof. Marco Alessandro Minetto

PAIN MANAGEMENT in the REHABILITATION PATIENT

12 aprile 2021

Webinar
in orario:
15.00 - 17.00

Partecipazione libera attraverso il collegam
alla seguente stanza virtuale:
https://unito.webex.com/meet/marco.min

Prof. Anthony Dickenson
Department of Neuroscience, Physiology and Pharmacology
University College London, London, UK

SCUOLA PIEMONTESE DI MEDICINA GENERALE
Massimo Ferrua

DOLORE MUSCOLO-SCHELETRICO:

INQUADRAMENTO MULTIDISCIPLINARE E STRATEGIE DI TRATTAMENTO

TORINO, 10 GIUGNO 2023
STARHOTEL MAJESTI

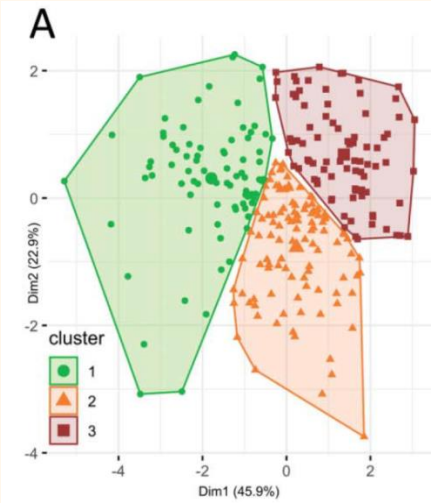
SOCIETÀ ITALIANA G.U.I.D.A. PER LA GESTIONE UNIFICATA E INTERDISCIPLINARE DEL DOLORE MUSCOLO-SCHELETRICO E DELL'ALGODISTROFIA

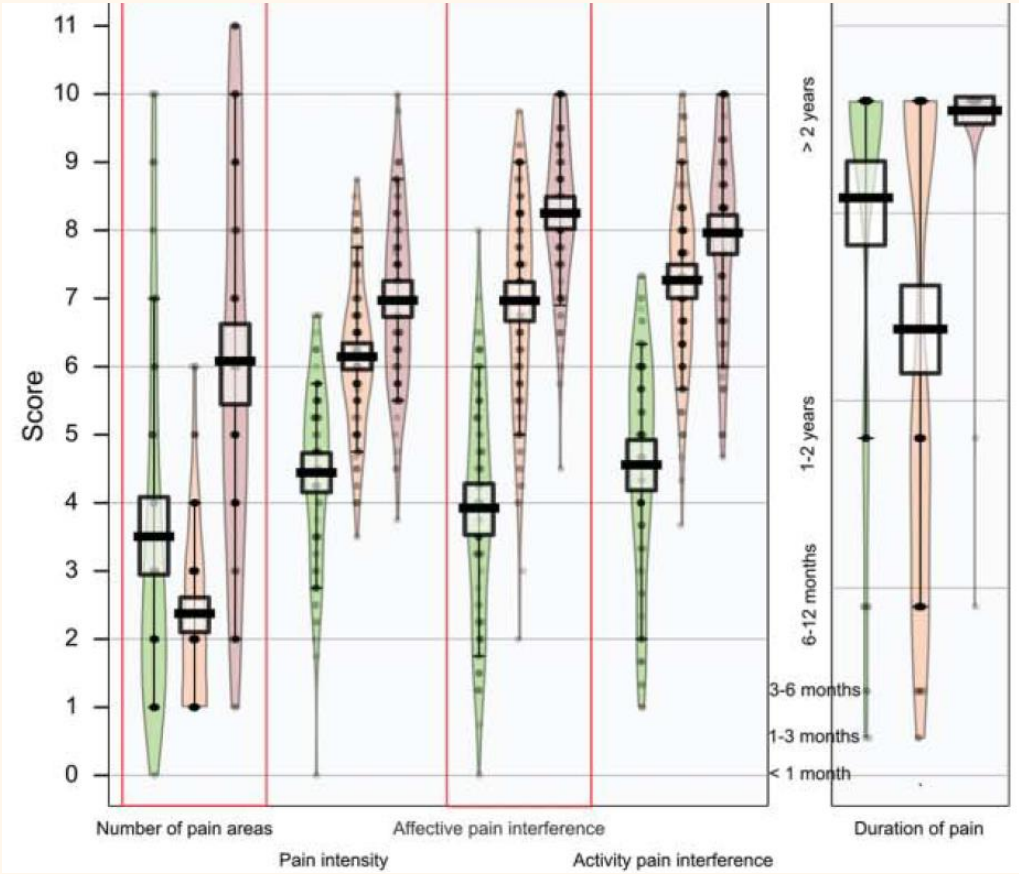
Machine learning suggests sleep as a core factor in chronic pain

Teemu Miettinen[a,*], Pekka Mäntyselkä[b], Nora Hagelberg[c], Seppo Mustola[d], Eija Kalso[a,e], Jörn Lötsch[f,g]

PAIN®
January 2021 • Volume 162 • Number 1

Pain phenotype related
- No. of pain areas
- Pain intensity
- Affective pain interference
- Activity pain interference





CLUSTER 1
Lowest pain intensity and pain interference

Cluster 3
Greatest number of pain areas, highest pain intensity, highest pain interference

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PAIN®
January 2021 • Volume 162 • Number 1

Duration of pain

Psychological parameters

Comorbidities

Pain phenotype related
- No. of pain areas
- Pain intensity
- Affective pain interference
- Activity pain interference

Lifestyle related
- Exercise periods of >20 minutes per week
- Hours spent sitting per day
- Sleep problems index
- Nutritional index
- Body mass index
- Systolic blood pressure, mm Hg
- Diastolic blood pressure, mm Hg
- Waist circumference

Pain etiology

Demographic parameters

AGENDA

- ❑ DOLORE
- ❑ **SOMATOTIPO E COMPOSIZIONE CORPOREA**
- ❑ INIBIZIONE MUSCOLARE ARTROGENICA

SOCIETÀ ITALIANA
G.U.I.D.A.
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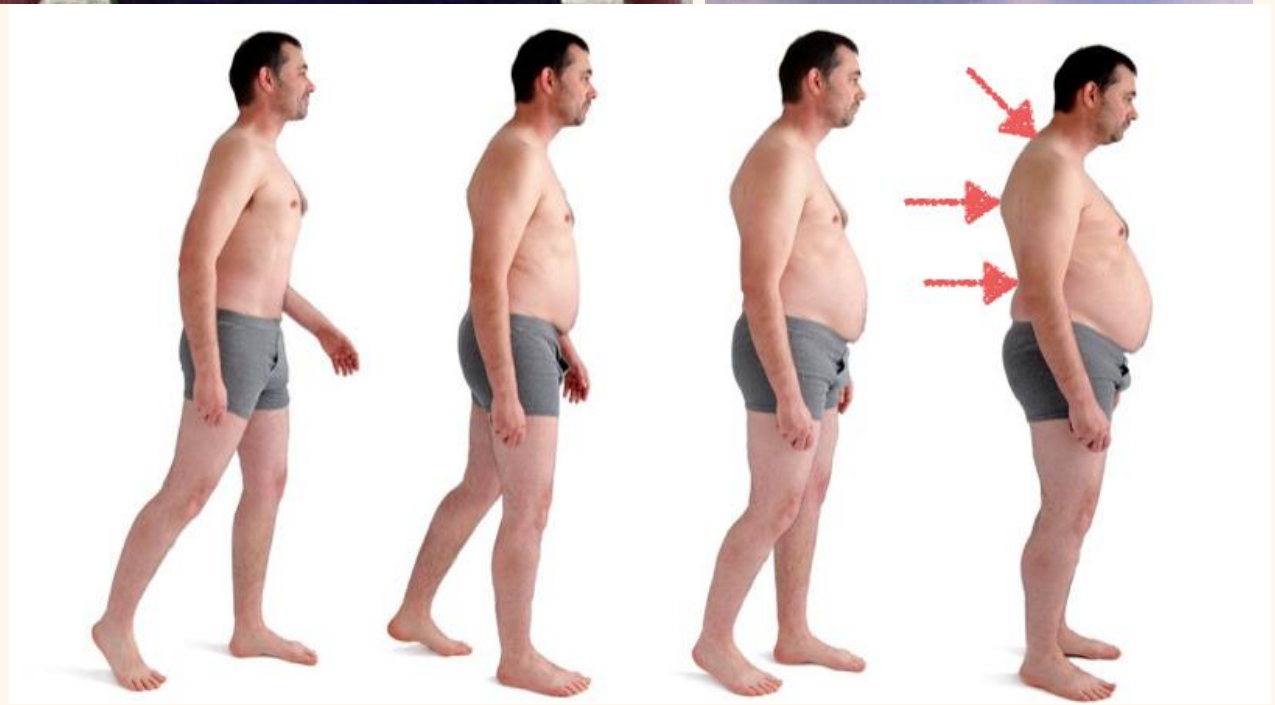


EYMARD ET AL. JOURNAL OF ORTHOPAEDIC RESEARCH OCTOBER 2017

Obesity and Radiological Severity Are Associated With Viscosupplementation Failure in Patients With Knee Osteoarthritis

Table 4. Multivariate Analysis of Factors Predicting OMERACT-OARSI Response After VS

	Odds Ratio	95%CI	*p*-Value
Sex (female)	0.67	0.31–1.44	0.300
Age	0.98	0.94–1.02	0.237
BMI	0.89	0.82–0.95	**0.001**
OARSI grade 3 vs. 1–2	0.38	0.18–0.77	**0.008**
Patient global assessment at baseline	1.09	0.84–1.42	0.504
WOMAC pain at baseline	0.98	0.83–1.16	0.834
WOMAC function at baseline	1.01	0.97–1.06	0.662

BMI, body mass index; IA, intra-articular; WOMAC, Western Ontario and McMaster Universities Osteoarthritis Index.
Statistically significant *p*-values are marked in bold.

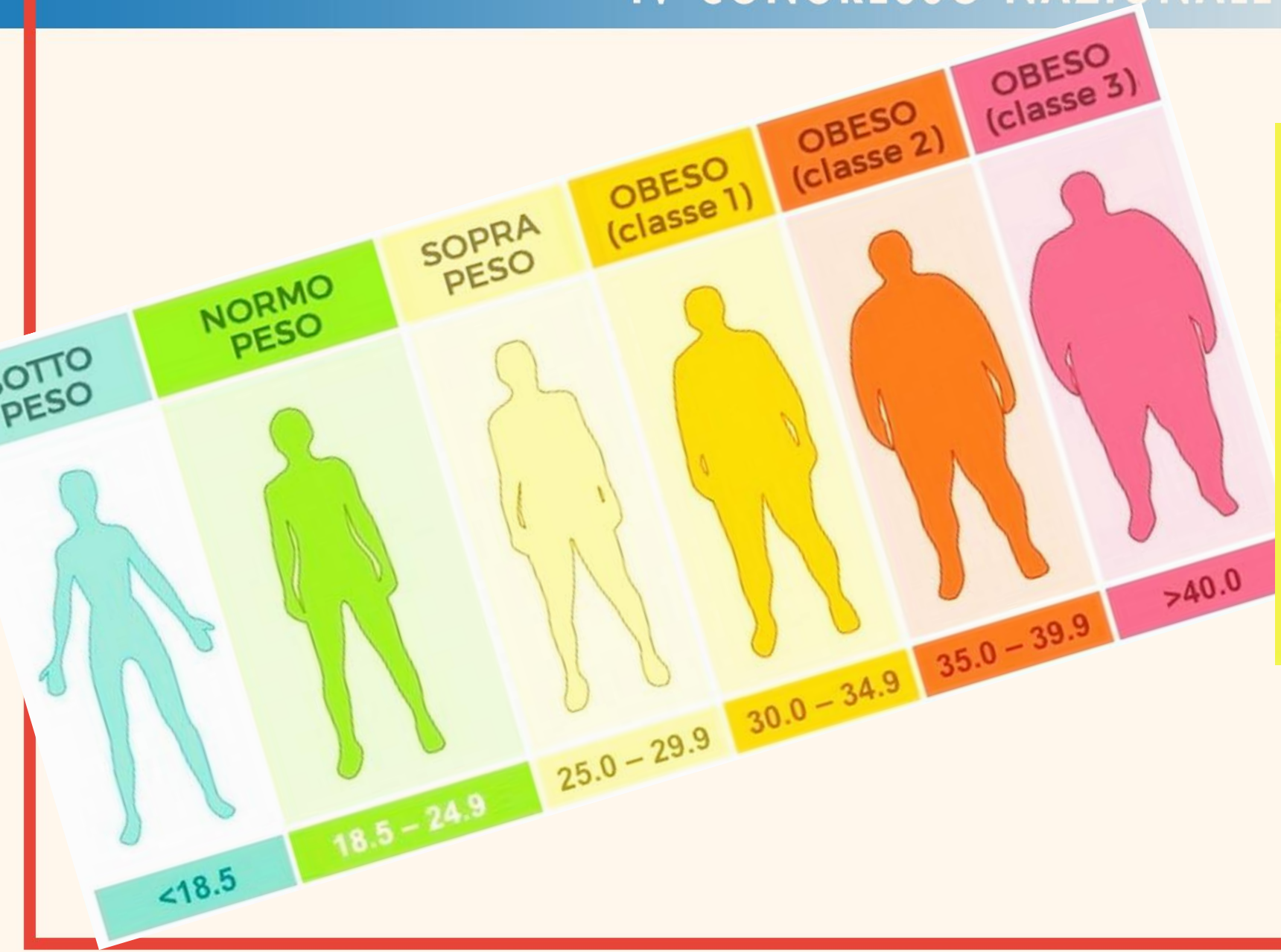
The association of obesity and severe TF space narrowing increases the risk of VS failure

American Society of Anesthesiologists®

AMERICAN SOCIETY OF ANESTHESIOLOGISTS CLASSIFICATION

To offer perioperative clinicians a simple categorization of a patient's physiological status that can help predict operative risk

ASA Classification	Definition	Examples
ASA I	A normal healthy patient	Healthy, non-smoking, no or minimal alcohol use
ASA II	A patient with mild systemic disease	Mild diseases only without substantive functional limitations. Current smoker, social alcohol drinker, pregnancy, obesity (30<BMI<40), well-controlled DM/HTN, mild lung disease
ASA III	A patient with severe systemic disease	Substantive functional limitations; One or more moderate to severe diseases. Poorly controlled DM or HTN, COPD, morbid obesity (BMI ≥40), active hepatitis, alcohol dependence or abuse, implanted pacemaker, moderate reduction of ejection fraction, ESRD undergoing regularly scheduled dialysis, history (>3 months) of MI, CVA, TIA, or CAD/stents.
ASA IV	A patient with severe systemic disease that is a constant threat to life	Recent (<3 months) MI, CVA, TIA or CAD/stents, ongoing cardiac ischemia or severe valve dysfunction, severe reduction of ejection fraction, shock, sepsis, DIC, ARD or ESRD not undergoing regularly scheduled dialysis
ASA V	A moribund patient who is not expected to survive without the operation	Ruptured abdominal/thoracic aneurysm, massive trauma, intracranial bleed with mass effect, ischemic bowel in the face of significant cardiac pathology or multiple organ/system dysfunction
ASA VI	A declared brain-dead patient whose organs are being removed for donor purposes	



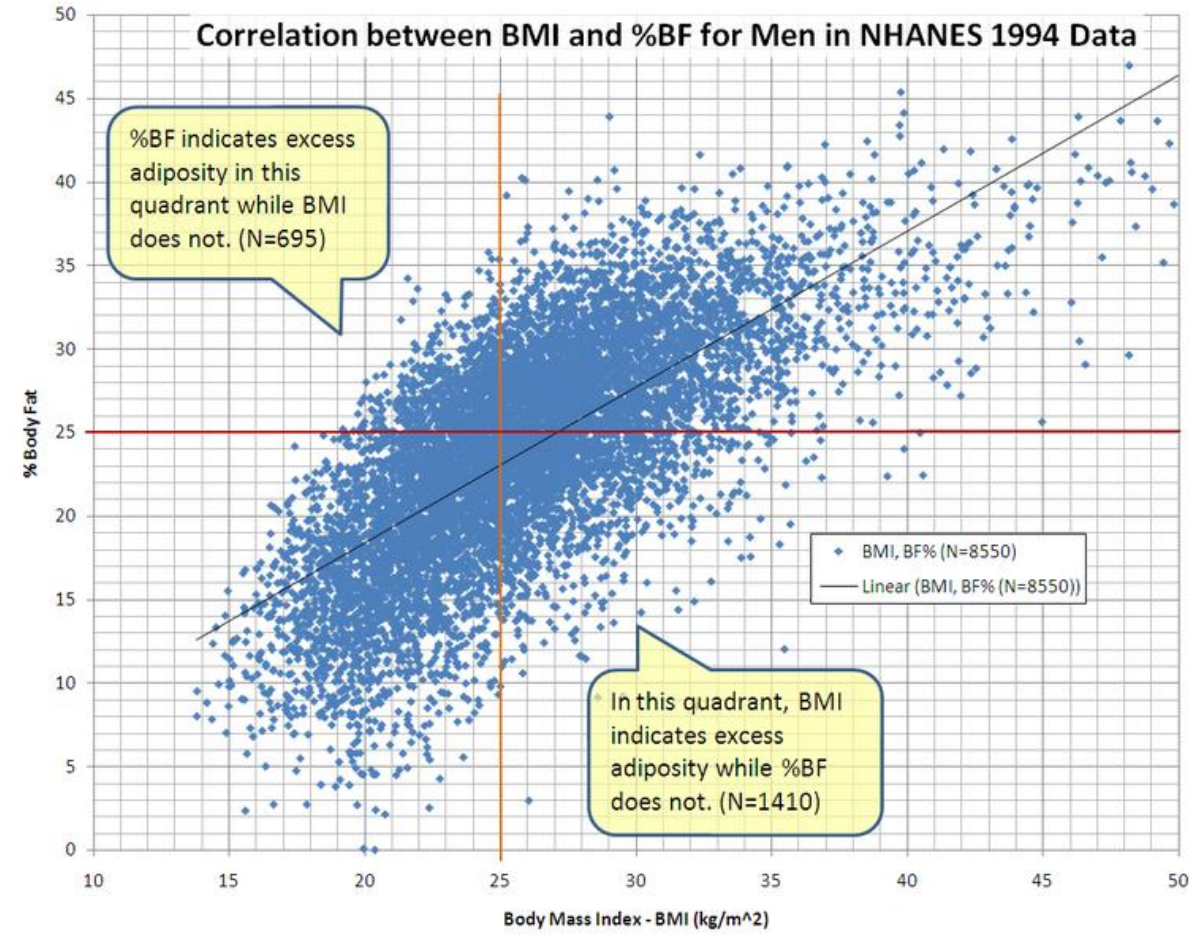
$$\frac{90\ (kg)}{1.80^{\,2}\ (m^2)}$$

27.8 kg/m²

Romero-Corral et al. *Int J Obes (Lond)*. 2008

Accuracy of Body Mass Index to Diagnose Obesity In the US Adult Population

By using BMI as a marker of obesity, we misclassify ≥ 50% of patients with excess body fat as being normal or just overweight



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CURRENT OPINION

A requiem for BMI in the clinical setting

Maria Cristina Gonzalez[a,b], *Maria Isabel T.D. Correia*[c], *and Steven B. Heymsfield*[b]

Volume 20 • Number 5 • September 2017

www.co-clinicalnutrition.com

KEY POINTS

- BMI has a good correlation with % body fat at the population level, but the predictive value at the individual level is very limited.
- BMI use in clinical practice may jeopardize the nutritional diagnosis, in particular of malnutrition.
- BMI less than 30 kg/m^2 does not exclude the presence of metabolic risks associated with the excess of adiposity.
- BMI at least 30 kg/m^2 does not exclude the presence of low muscle mass (sarcopenic obesity), mainly in some clinical situations as in elderly, cancer, chronic diseases and critically ill patients.

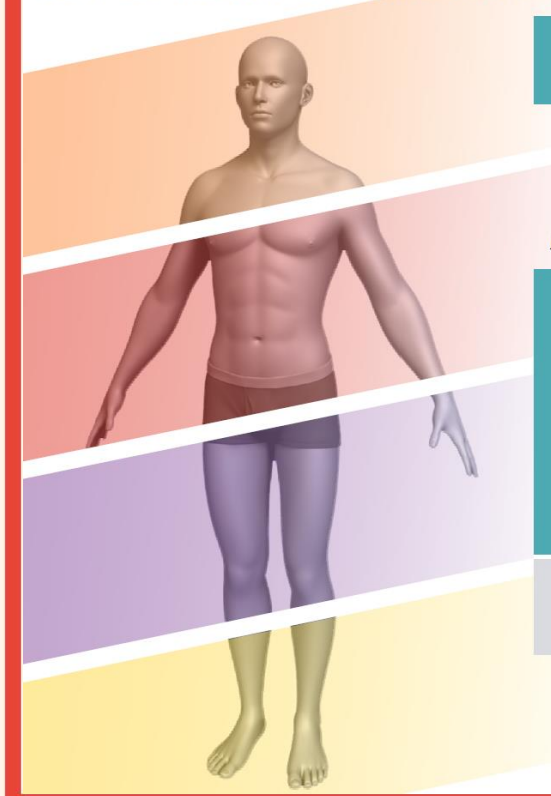
University of Turin
Physical Medicine and Rehabilitation residency program

DIPARTIMENTO di SCIENZE CHIRURGICHE

Director: Prof. Marco Alessandro Minetto

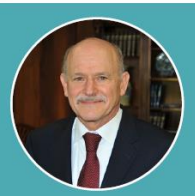
METHODS for

BODY COMPOSITION ASSESSMENTS



October 4th, 2021
4.30 - 6.30 pm

Webinar
Free participation
through connection to the virtual room:
https://unito.webex.com/meet/marco.minetto

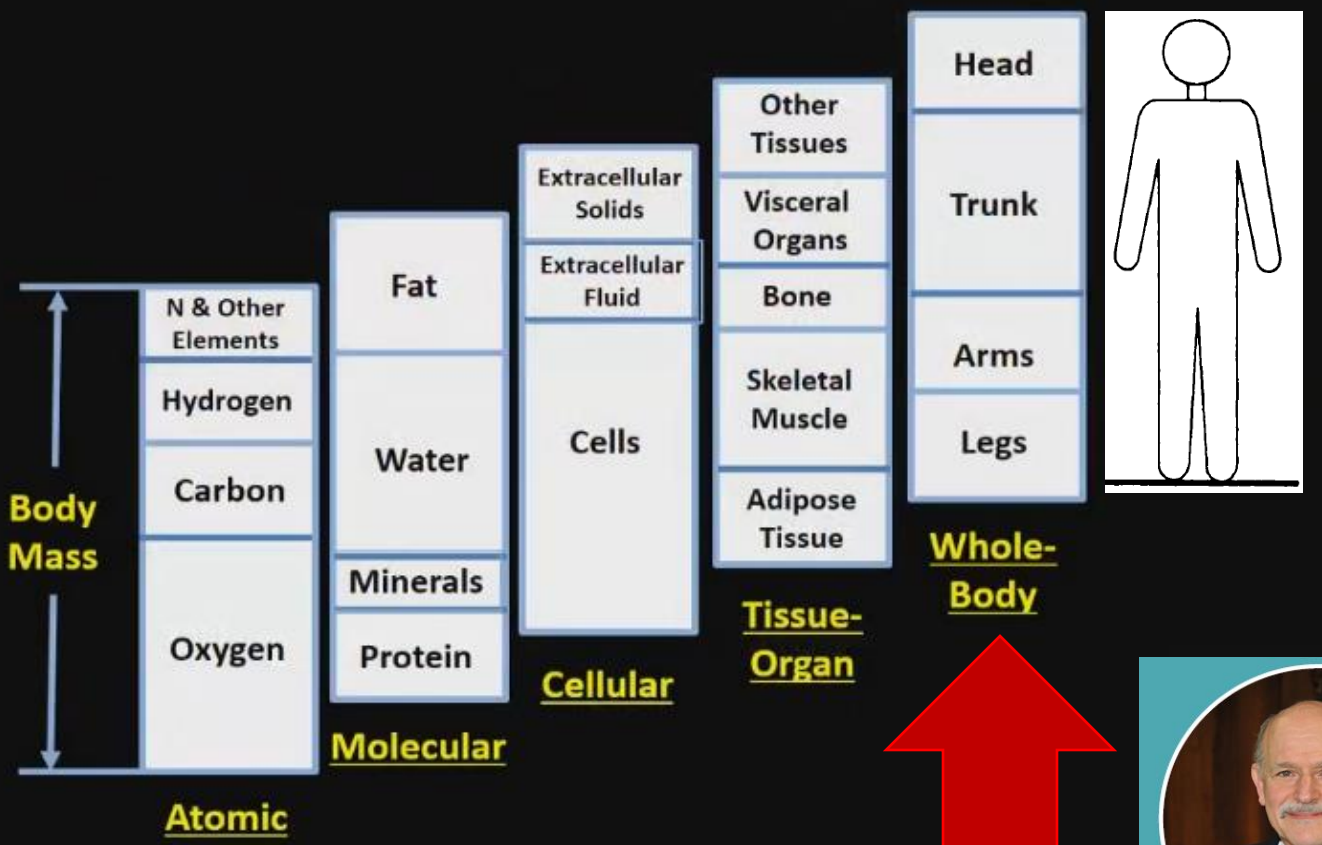


Prof. Steven B. Heymsfield
Pennington Biomedical Research Center
Louisiana State University, Baton Rouge, USA

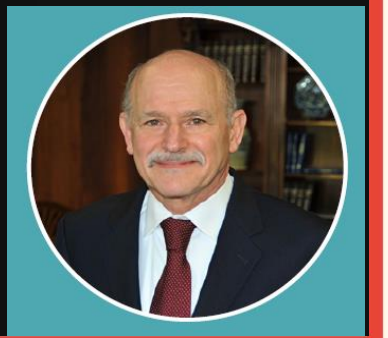
Discussant
Prof. Angelo Pietrobelli
University of Verona, Italy

Organizing Secretary
e-bef di Elisabetta Bersezio e C. s.a.s.
C.so Regina Margherita 89, 10124 Torino
Tel. 011.884376 - Fax 011.19850522
www.e-bef.it | e-bef@hotmail.it

Five-Level Model of Body Composition



Am J Clin Nutr 1992;56:19–28.



IV CONGRESSO NAZIONALE

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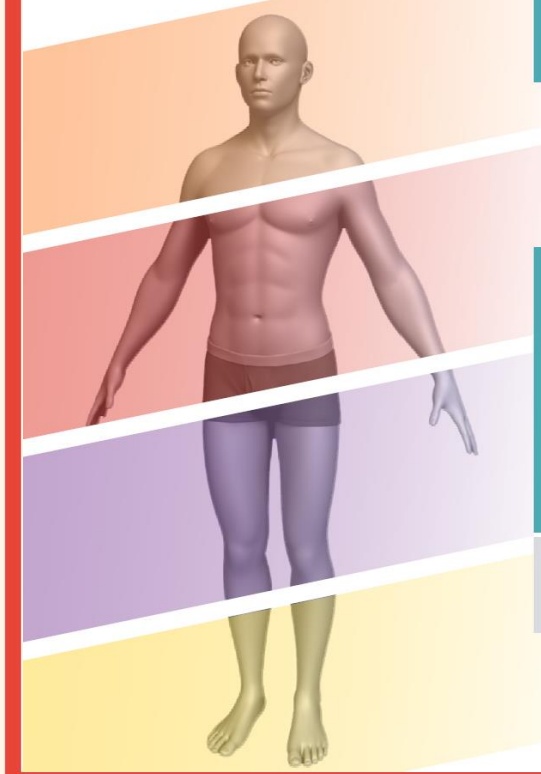
University of Turin
Physical Medicine and Rehabilitation residency program

Director: Prof. Marco Alessandro Minetto

Dipartimento di Scienze Chirurgiche

METHODS for

BODY COMPOSITION ASSESSMENTS



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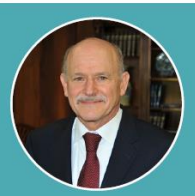

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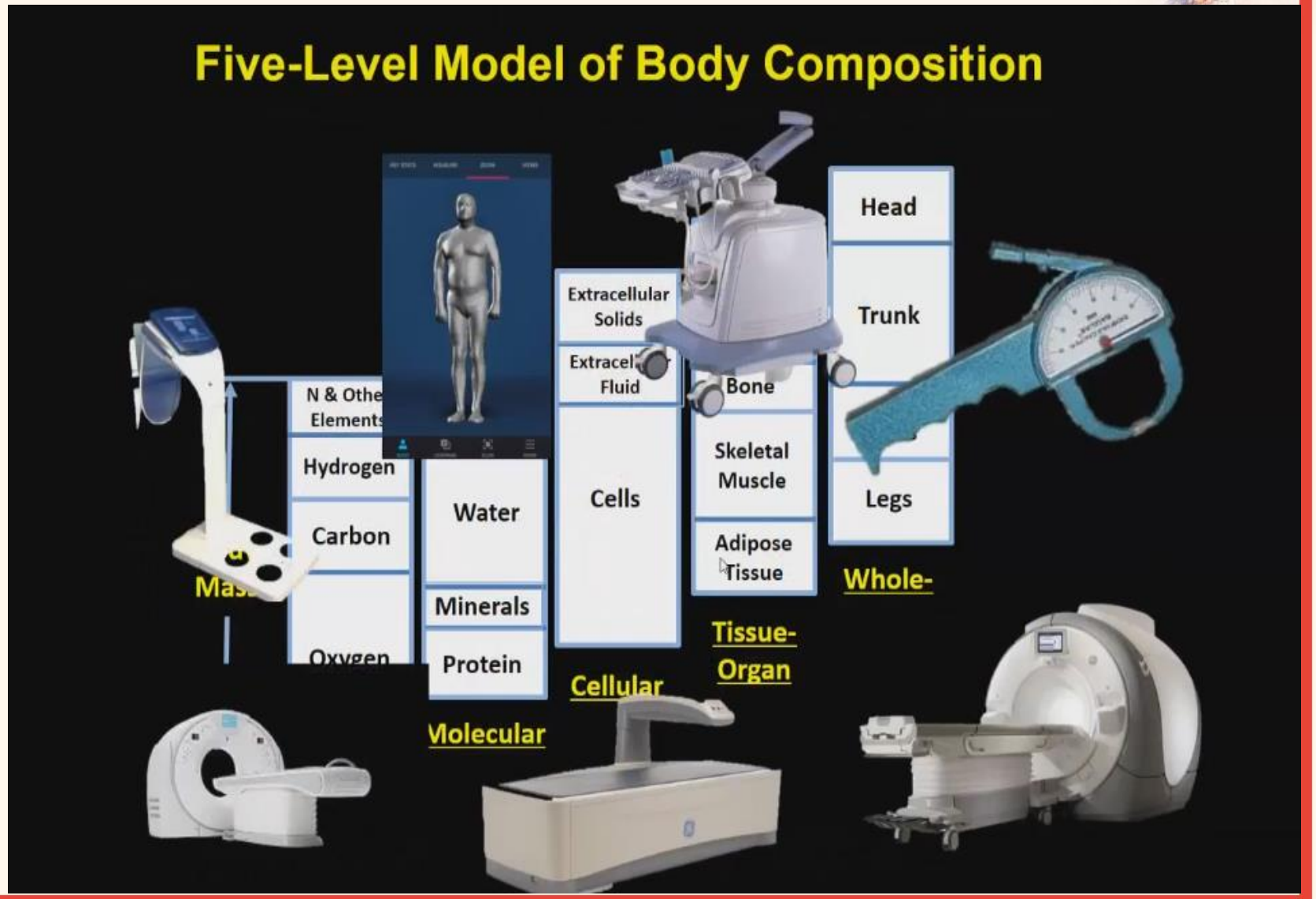
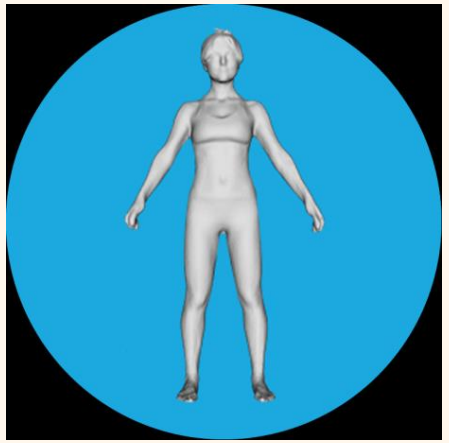
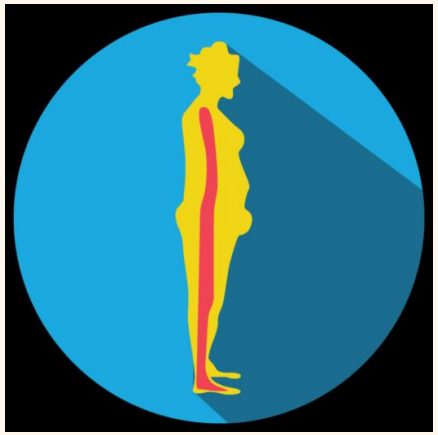


3D AVATAR

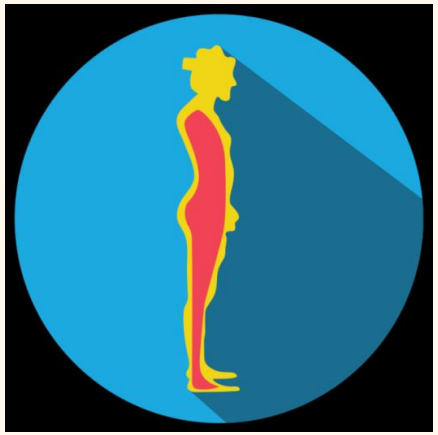


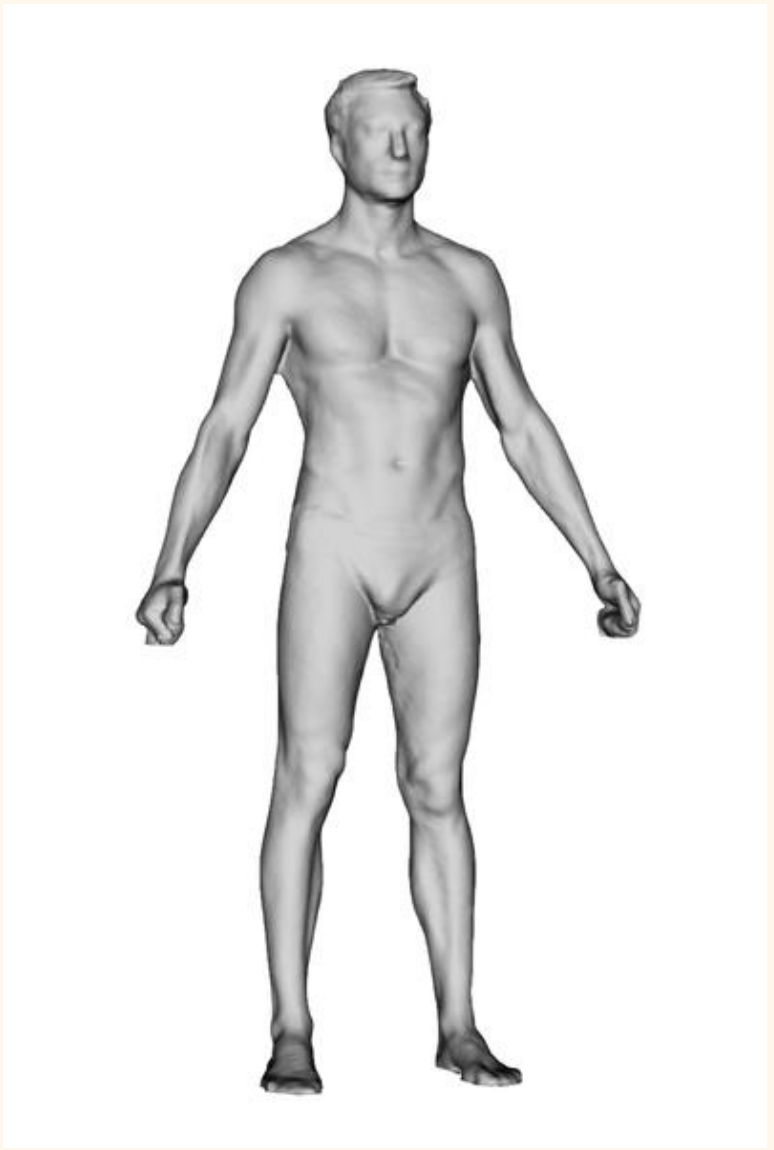
BODY SHAPE

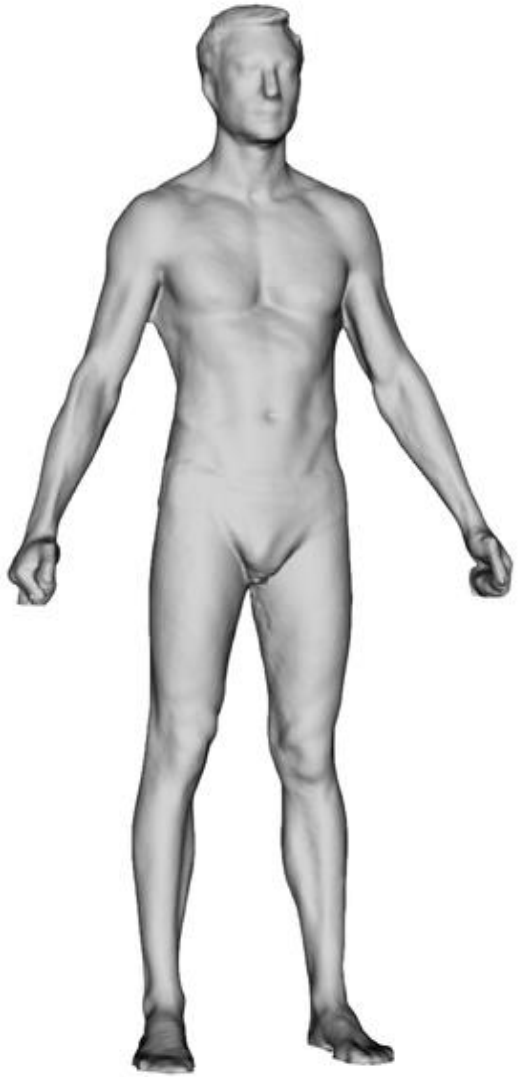
LEAN MASS



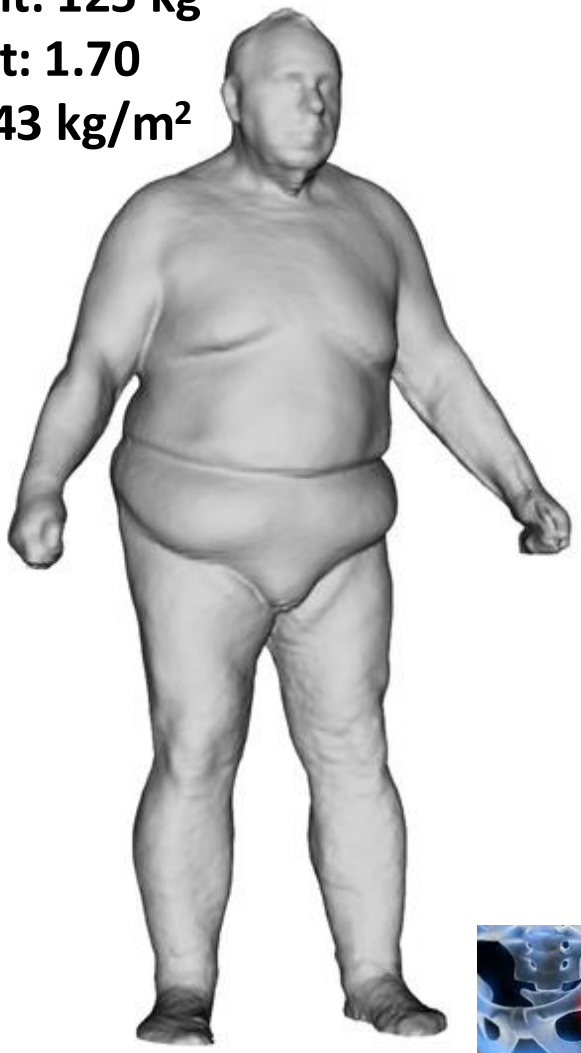
FAT MASS







Weight: 125 kg
Height: 1.70
BMI: 43 kg/m²



COMPOSIZIONE

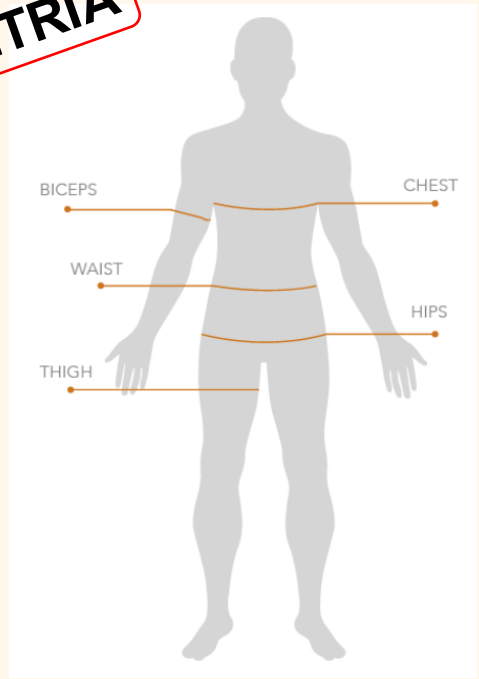
PERCENTUALE DI GRASSO CORPOREO
14.8 %

PESO
75.4 kg

MASSA GRASSA
11.2 kg

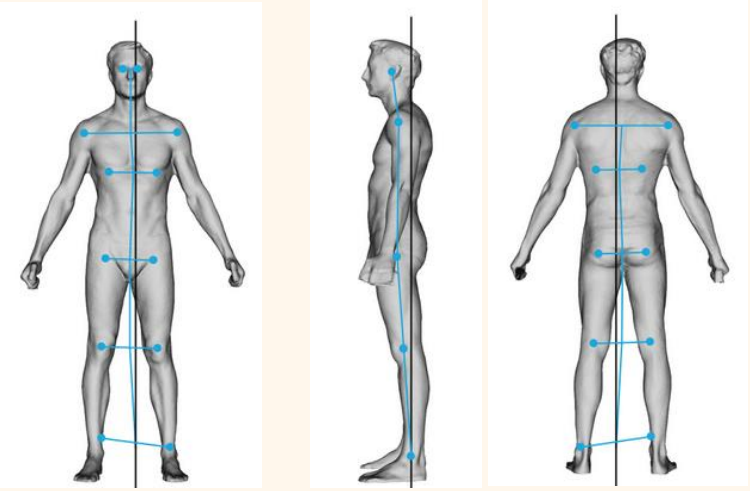
MASSA MAGRA
64.2 kg

ANTROPOMETRIA



Collo	39.8
Il petto	109.8
Vita	82.7
Fianchi	97.9
Bicipite Sinistro	32.3
Bicipite Destro	32.9
Avambraccio sinistro	27.7
Avambraccio destro	29.1
Coscia sinistra	55.4
Coscia destra	55.8
Polpaccio sinistro	37.8
Polpaccio destro	38

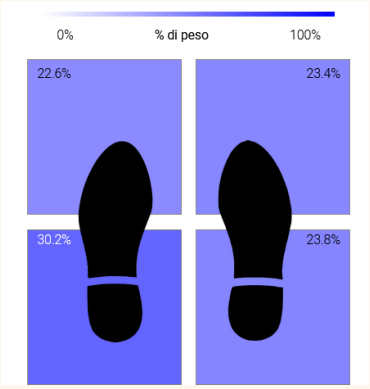
POSTURA



EQUILIBRIO

Anteriore sin
Anteriore dx

Posteriore sin
Posteriore dx

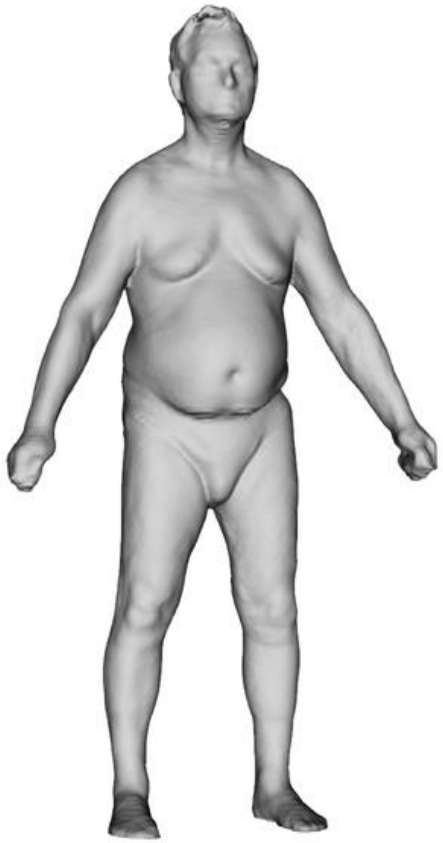


DXA

Grasso Massa (g) 24191

% adipe 30.3

Body scan



BODY FAT PERCENT	BODY SHAPE RATING
30.92%	22
WEIGHT	WAIST CIRCUMFERENCE
77.8 kg	107.7 cm
FAT MASS	WAIST TO HIP RATIO
24 kg	1.12
LEAN MASS	TRUNK TO LEG VOLUME RATIO
53.8 kg	2.4

Fat mass (kg)

−19.06+4.05 (waist circumference/waist width) −11.78 (average leg volume) −10.48 (is male)+22.29 (torso volume)

AGENDA

- ❑ DOLORE
- ❑ SOMATOTIPO E COMPOSIZIONE CORPOREA
- ❑ **INIBIZIONE MUSCOLARE ARTROGENICA**

IV CONGRESSO NAZIONALE

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SCUOLA DI SPECIALIZZAZIONE IN MEDICINA FISICA E RIABILITATIVA

Direttore: Prof. Marco Alessandro Minetto

UNIVERSITÀ DI TORINO

DIPARTIMENTO di SCIENZE CHIRURGICHE

Corso di aggiornamento sulle TERAPIE FISICHE

Evento residenziale
(max 30 partecipanti)
+ webinar simultaneo

20 Marzo

14.30 **L'azienda: mission, vision, core values**
Stimolazione biofisica del tessuto articolare
Stefania Setti, IGEA, Carpi

16.30 **Magnetotraduzione extracorporea (EMTT): evidenze e indicazioni**
Marco A. Minetto, Università di Torino

17.30 **Hands-on session: strumenti per la stimolazione biofisica**

3 Aprile

14.30 **Introduzione e presentazione del relatore**
Marco A. Minetto, Università di Torino

15.00 **Physiological and methodological considerations for the use of neuromuscular electrical stimulation**
Nicola A. Maffiuletti, Schultess Clinic, Zurich, Switzerland

15 Maggio

14.30 **Hands-on session: strumenti per i trattamenti a onde d'urto**

15.30 **L'azienda: mission, vision, core values**
Onde radiali e onde d'urto: oggi e domani
Lorenzo Martinelli, STORZ MEDICAL ITALIA, Milano

15.45 **La Società Italiana Terapia con onde d'urto (SITOD)**
Sergio Gigliotti (Presidente SITOD)

16.15 **Onde radiali e onde d'urto per la medicina riabilitativa rigenerativa: evidenze, indicazioni, protocolli**
Cristina D'Agostino, Humanitas University, Milano


Stefania Setti


Nicola A. Maffiuletti


Lorenzo Martinelli


Sergio Gigliotti


Cristina D'Agostino

Partecipazione in presenza presso
Aula Didattica della
SC Medicina Fisica e Riabilitazione U
Ospedale Molinette

ARTHROGENIC MUSCLE INHIBITION (AMI)

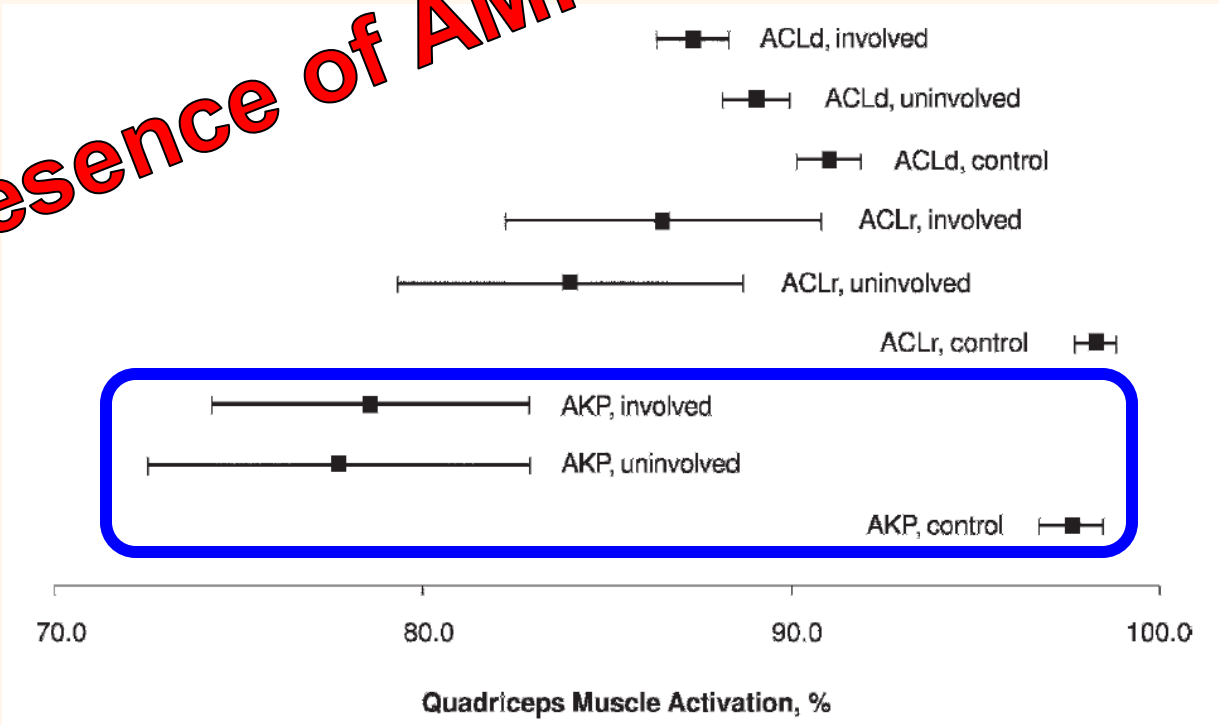
A clinical impairment caused by an ongoing reflex inhibition of the musculature surrounding a joint following distention/damage to joint structures

Journal of Athletic Training 2010;45(1):87–97

Quadriceps Activation Following Knee Injuries: A Systematic Review

Joseph M. Hart, PhD, ATC; Brian Pietrosimone, PhD, ATC; Jay Hertel, PhD, ATC, FNATA, FACSM; Christopher D. Ingersoll, PhD, ATC, FNATA, FACSM

Presence of AMI



ACL deficiency

ACL reconstruction

AKP: anterior knee pain

Bilateral quadriceps activation failure in ACL patients and OA patients compared with controls

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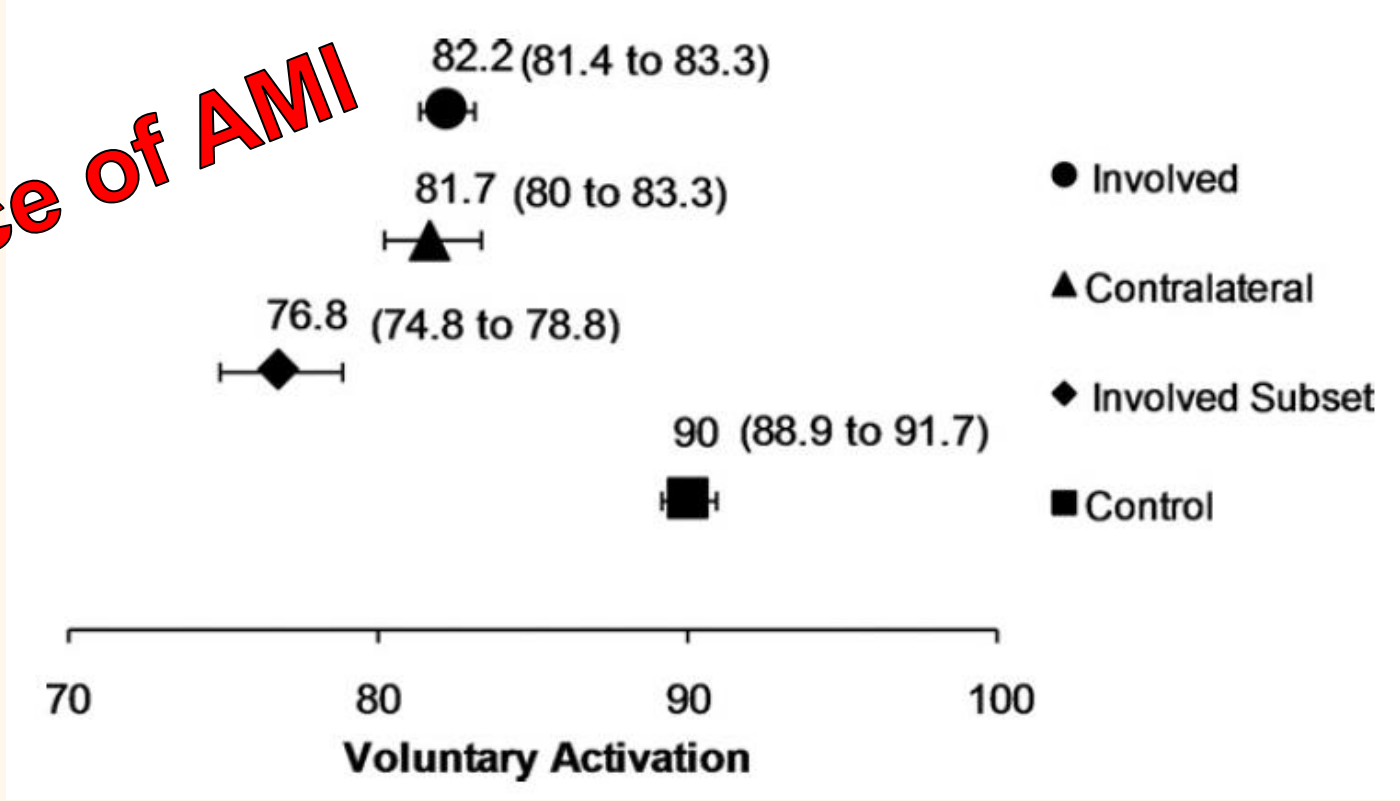
Pietrosimone et al *PM R 2011;3:153-162*

Voluntary Quadriceps Activation Deficits in Patients with Tibiofemoral Osteoarthritis: A Meta-Analysis

Presence of AMI



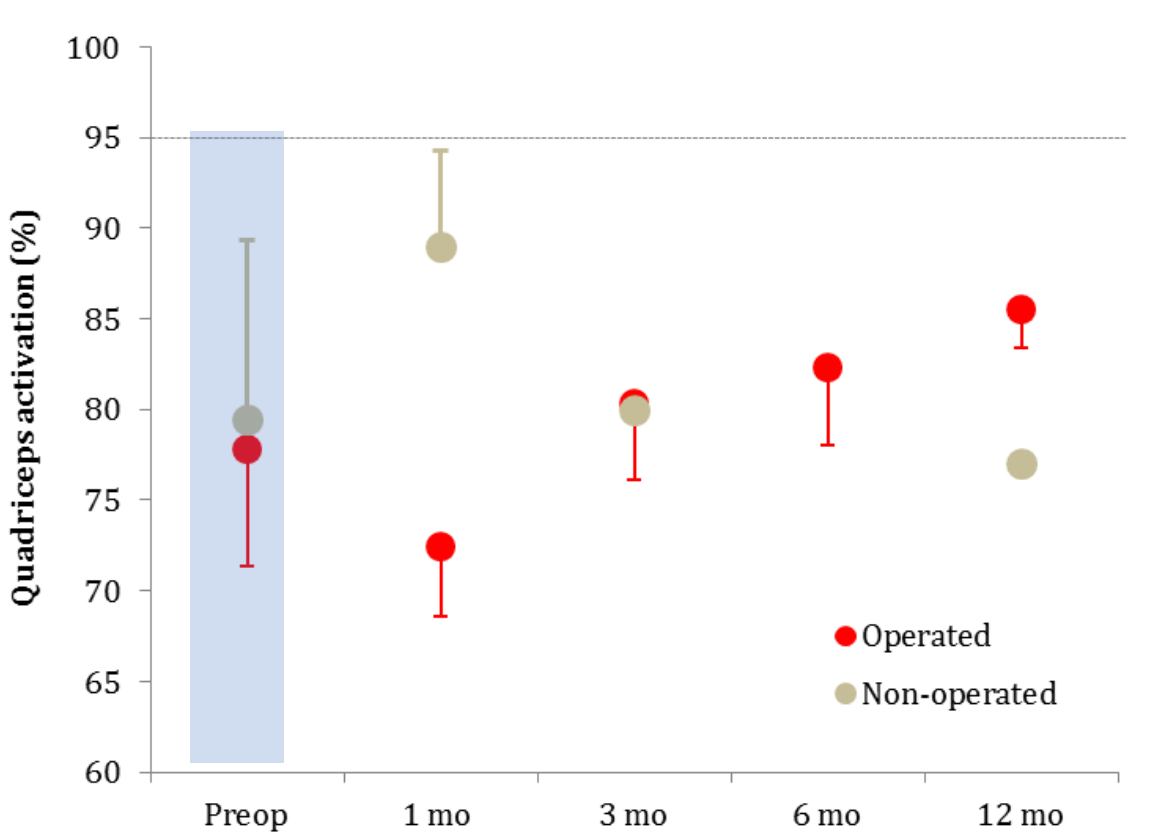
Quadriceps activation failure in both the involved and contralateral limbs of OA patients compared with controls

Improvement of Voluntary Quadriceps Muscle Activation After Total Knee Arthroplasty

Alexander Berth, MD, Dietmar Urbach, MD, Friedemann Awiszus, MD

Arch Phys Med Rehabil Vol 83, October 2002

Quadriceps activation failure time course (TKA)



1) Pre-operative deficit

2) Bilateral deficit

3) Plasticity !! (1 month)

4) Chronic deficit

IV CONGRESSO NAZIONALE

SOCIETÀ ITALIANA G.U.I.D.A. PER LA GESTIONE UNIFICATA E INTERDISCIPLINARE DEL DOLORE MUSCOLO-SCHELETRICO E DELL'ALGODISTROFIA

UNIVERSITÀ DEL PIEMONTE ORIENTALE

Congresso Scientifico
AIFI Piemonte e Valle d'Aosta 2023

Sabato 15 aprile 2023

Ricondizionamento fisico: dai principi alla pratica clinica

Aula Magna CTO – Via Zuretti 29 Torino

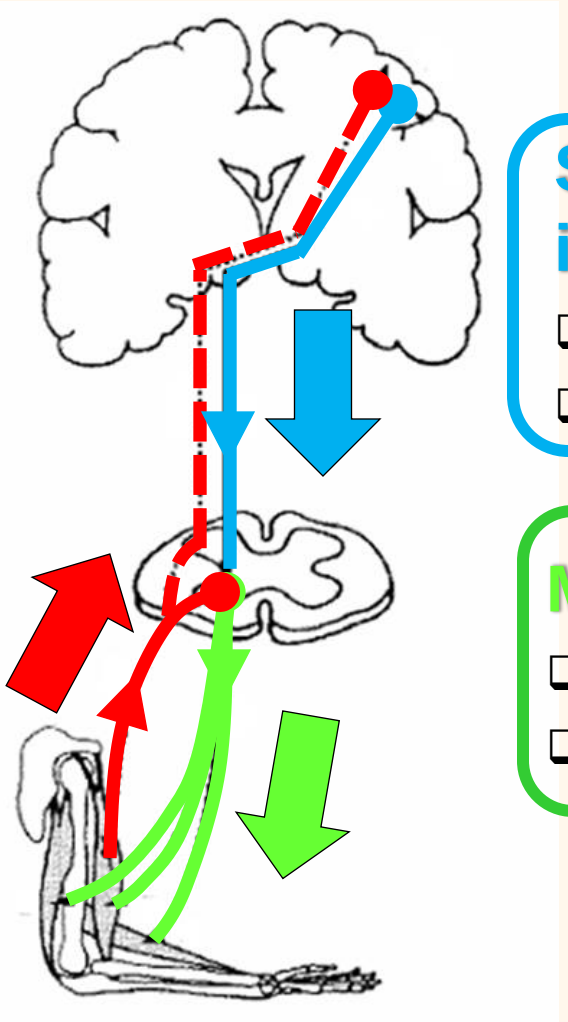
Body composition

- ❑ Nutrition
- ❑ Aerobic ex
- ❑ Drugs

*Take home message

Sensory inputs

- ❑ Pain management
- ❑ Contralateral training/ex
- ❑ Force/EMG biofeedback



Supraspinal influences

- ❑ Cognitive strategies
- ❑ Mental practice

Motor units

- ❑ Neuromuscular e-stim
- ❑ “Fast activation”

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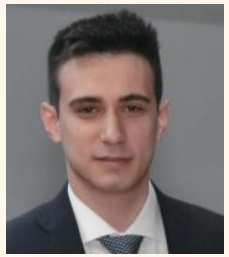
PER LA GESTIONE UNIFICATA E INTERDISCIPLINARE DEL DOLORE MUSCOLO-SCHELETRICO E DELL'ALGODISTROFIA

thanks!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