Nafarroako Kirolaren eta Gazteriaren Institutua
Instituto Navarro de Deporte y Juventud

SUELO PÉLVICO: HERRAMIENTA DE EQUIDAD, MEJORA DEL RENDIMIENTO Y SALUD

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1

2




3


4

"Lo sentimos, pero el jefe de bomberos dijo que demasiadas vaginas en la sala de reuniones son un peligro para la seguridad"

5

6

"Aborrezco a la mujer sabia. Que no viva bajo mi techo la que sepa más que yo, y más de lo que conviene a una mujer. Porque Venus hace a las doctas las más depravadas". (Euripides)

"No están hechas para las ciencias más elevadas" (Hegel)

"La anatomía es el destino. Las niñas sufren toda la vida el trauma de la envidia del pene tras descubrir que están anatómicamente incompletas". (Freud)

"Es orden natural entre los humanos que las mujeres estén sometidas al hombre, porque es de justicia que la razón más débil se someta a la más fuerte". (San Agustín)

"Una mujer igual al hombre significaría "el fin de la institución del matrimonio, la muerte del amor y la ruina de la raza humana". El lugar ideal para la mujer es el hogar o el burdel (Proudhon)

7

8

HERMOSA ENCANTADORA PRECIOSA

SEXY SOLTERA FÉRTIL EXQUÍSITA

11.000 millones

3 millones

JUSTO PACÍFICO RACIONAL

HONORABLE BRUTAL VALIENTE

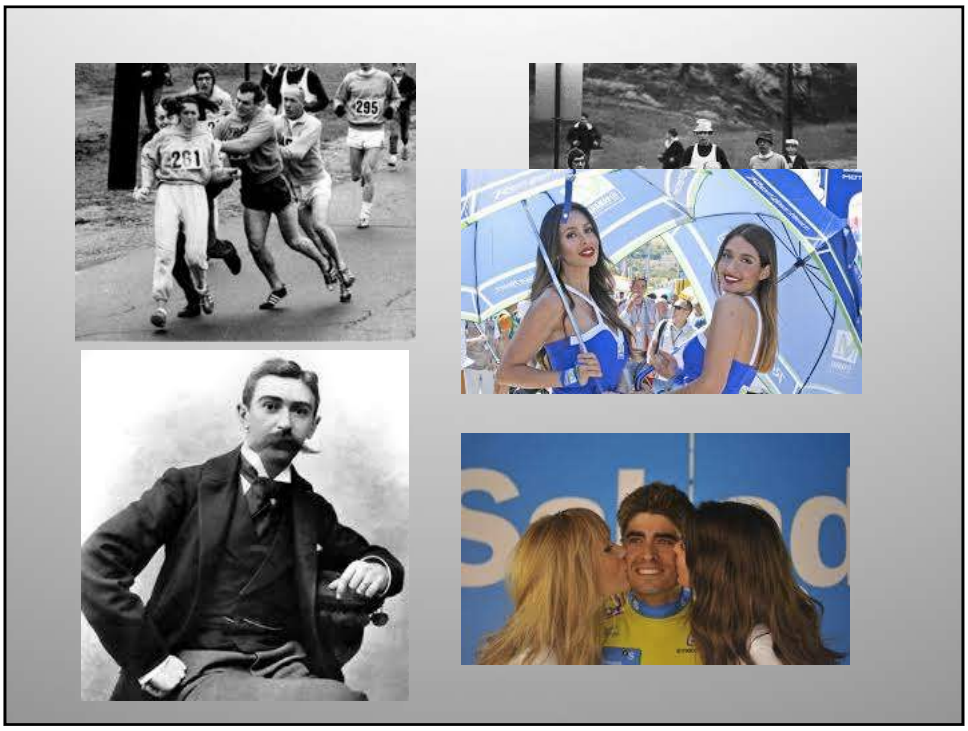
9

Mosaicos de la villa de la Piazza Armerina s.VI a.C. (Sicilia)

(García Romero, F. "El deporte femenino en la antigua Grecia)

10

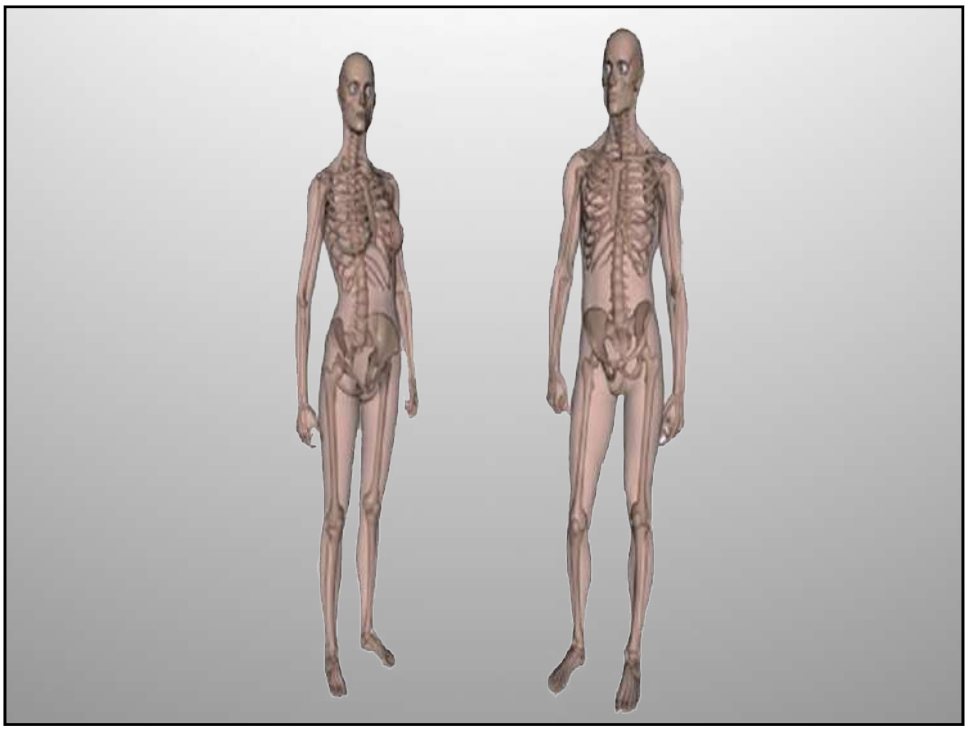
11



12


LA NUEVA AMBICIÓN RUBIA
LA NUEVA LOLITA
GLAMOUR
BELLEZA
LA NIÑA BONITA
MACHADA
HISTÓRICO
HAZAÑA
CARLOS I DEL MUNDO
LA ARMADA INVENCIBLE
(Cristina Gallo)

13



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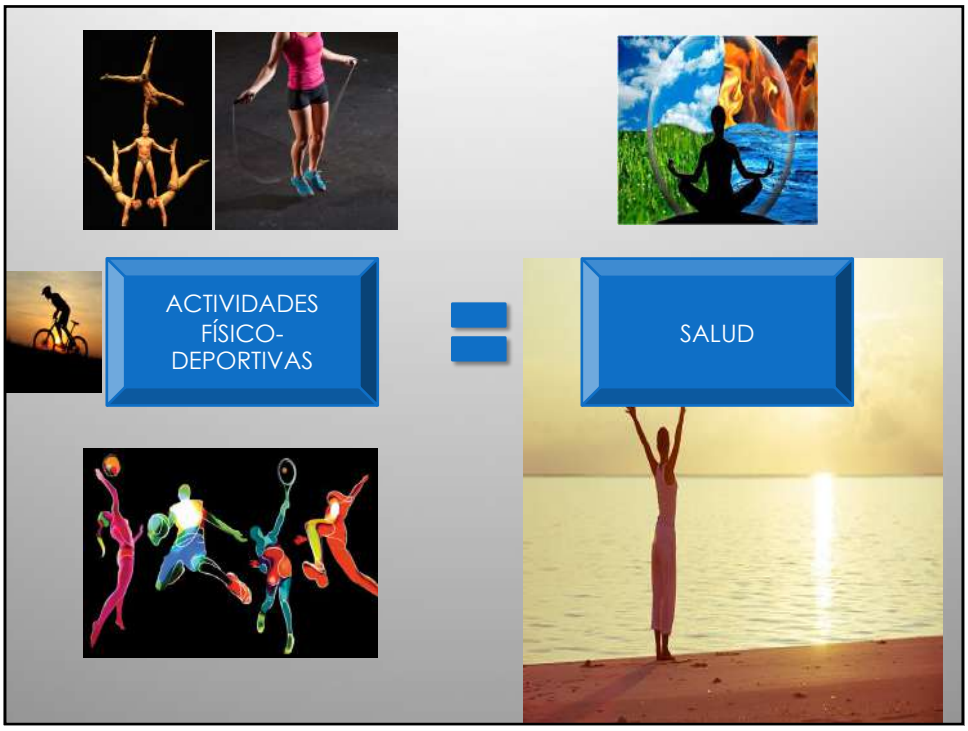
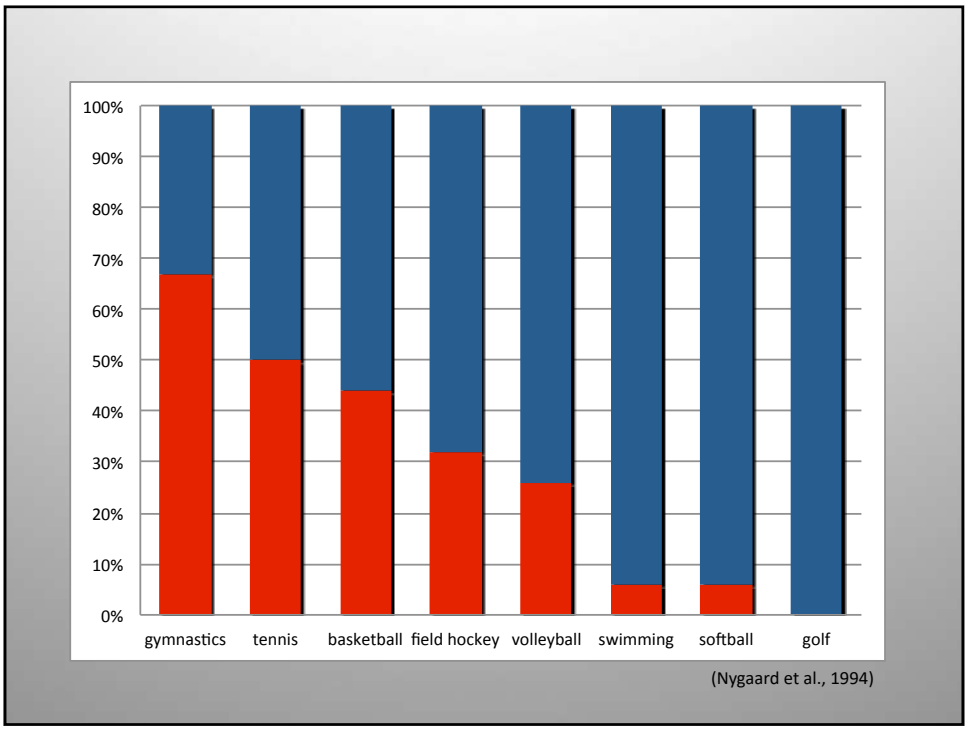
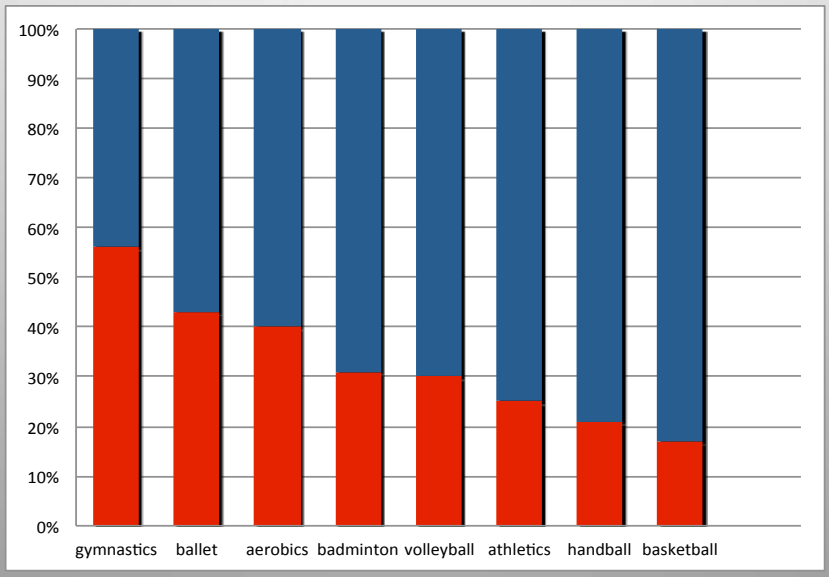

ACTIVIDADES FÍSICO-DEPORTIVAS
SALUD

15


100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
gymnastics
tennis
basketball
field hockey
volleyball
swimming
softball
golf
(Nygaard et al., 1994)

16



(Thyssen et al., 2002)

17

105 62,8%
105 34%

(Elleuch et al., 1998)

Cliché: etario

Cliché: sedentario

Communication
L'incontinence urinaire chez la femme sportive nullipare. Enquête épidémiologique. À propos de 105 cas
MH Elleuch[1], I Ghattassi[1], M Guermazi[1], J Lahiani[1], M Kassis[2], J Dammak[2], S Lopez[3]
Résumé
Cent cinq femmes jeunes (âge moyen 21,5 ans) nullipares, sportives de haut niveau ont participé à une enquête par questionnaire afin de rechercher une éventuelle relation entre l'incontinence urinaire d'effort (IUE) et le sport. Soixante-six sportives, soit 62,8 %, ont déclaré une IUE le plus souvent peu gênante à la pratique du sport et 63 sportives, soit 60 %, une IUE à la vie quotidienne. Ces deux types sont fortement liés. Une étude comparative sur une population similaire de 105 nullipares non sportives réalisée parallèlement montre que 38 (soit 34 %) seulement déclarent avoir des fuites urinaires d'effort confirmant ainsi l'influence de la pratique du sport sur le plancher pelvien. En utilisant les tests statistiques χ^2 et le test *t* de Student, nous avons recherché une relation entre l'IUE et différents facteurs (âge, nombre d'heures d'entraînement et le type de sport pratiqué, l'entraînement abdominal, l'existence d'une énurésie à l'enfance). Une relation statistiquement significative n'a été retrouvée qu'avec l'existence d'une constipation. Ne considérant pas ces troubles comme pathologiques et du fait des tabous, peu de sportives en parlent. La prévention de ces troubles doit obligatoirement passer par l'information et par l'apprentissage d'un verrouillage périnéal efficace au cours de la pratique sportive.

18

488 30 a.
$p < 0{,}006$

(Fozzatti et al., 2012)

Int Urogynecol J. 2012 Dec;23(12):1687-91. doi: 10.1007/s00192-012-1786-z. Epub 2012 May 23.
Prevalence study of stress urinary incontinence in women who perform high-impact exercises.
Fozzatti C[1], Riccetto C, Herrmann V, Brancalion MF, Raimondi M, Nascif CH, Marques LR, Palma PP.
Author information

Abstract

INTRODUCTION:
Stress urinary incontinence is a frequent complaint in medical offices and studies have shown that women who practice high impact sports develop its symptoms.

OBJECTIVE:
To evaluate the prevalence of stress urinary incontinence in women who attend gyms and perform high impact exercises and correlate it with women who do not attend gyms.

METHOD:
Prospective comparative study in which 488 nulliparous women of normal weight were divided into a Study Group, composed of womenwho attended gyms, and a Comparative Group, composed of women who did not attend gyms. Three questionnaires were used for the evaluation ofstress urinary incontinence and the results of the ICIQ-SF questionnaire were used to compare the groups.

RESULTS:
There was a significant difference between groups on the ICIQ-SF. The average in the Study Group was 1.68 (+ 3.46) and in the Comparative Group the average was 1.02 (+ 2.69) ($p = 0.006$).

CONCLUSION:
Women who attend gym and perform high impact exercises have a higher prevalence of urinary incontinence symptoms, independent of the exercise modality, than women who do not perform any high impact exercise

19

685 33 a.
25%

(Bø, Bratland-Sanda & Sundgot-Borgen, 2011)

Neurourol Urodyn. 2011 Mar;30(3):370-3. doi: 10.1002/nau.21006. Epub 2011 Feb 8.
Urinary incontinence among group fitness instructors including yoga and pilates teachers.
Bø K[1], Bratland-Sanda S, Sundgot-Borgen J.

Abstract:

AIMS:
Controversies exist on the role of physical activity on urinary incontinence (UI), and search on PubMed revealed no studies on UI in fitnessinstructors. The aim of this study was to investigate the prevalence of UI among female group fitness instructors, including Pilates and yogateachers.

METHODS:
This was a cross-sectional study of 1,473 instructors representing three of the largest fitness companies recruited from 59 fitnesscenters in Norway. They filled in an online survey (Questback) about general health, educational background, and number of hours teaching per week. Prevalence of UI was evaluated by the International Consensus on Incontinence Questionnaire, short form (ICIQ-UI SF).

RESULTS:
Three out of 152 men (2%) reported UI. Six hundred eighty-five women, mean age 32.7 years (range 18-68) answered the questionnaire. 26.3% of all the female instructors reported to have UI, with 21.4% reporting leakage ≥ once a week, 3.2% 2-3 times/week and 1.7% ≥ once per day. 24.4% reported the leakage to be small to moderate and the bother score was 4.6 (SD 2.4) out of 21. 15.3% reported leakage during physical activity and 10.9% when coughing/sneezing. 25.9% of yoga and Pilates instructors reported UI.

CONCLUSIONS:
This is the first report on UI among fitness instructors and the results indicate that UI is prevalent among female fitnessinstructors, including yoga and Pilates teachers. More information about this topic seems to be important in the basic education of fitnessinstructors

20

291 22,8 a.
51,9 %

(Thyssen et al., 2002)

Int Urogynecol J Pelvic Floor Dysfunct. 2002;13(1):15-7.
Urinary incontinence in elite female athletes and dancers.
Thyssen HH[1], Clevin L, Olesen S, Lose G.
Author information
Abstract
The aim of this study was, to determine the frequency of urinary loss in elite women athletes and dancers. Elite athletes in eight different sports, including ballet, filled in an evaluated questionnaire about urinary incontinence while participating in their sport/dancing and during daily life activities. A total of 291 women with a mean age of 22.8 years completed the questionnaire, providing a response rate of 73.9%. Overall, 151 women (51.9%) had experienced urine loss, 125 (43%) while participating in their sport and 123 (42%) during daily life. The proportion of urinary leakage in the different sports was: gymnastics 56%, ballet 43%, aerobics 40%, badminton 31%, volleyball 30%, athletics 25%, handball 21% and basketball 17%. During sport 44% had experienced leakage a few times, 46.4% now and then, and 9.6% frequently. During daily life the figures were: 61.7% a few times, 37.4% now and then, and 0.8% frequently. Of those who leaked during sport, 95.2% experienced urine loss while training versus only 51.2% during competition (P<0.001). The activity most likely to provoke leakage was jumping. Sixty per cent (91/151) occasionally wore pads or panty shields because of urine loss. Urinary leakage is common among elite athletes and dancers, particularly during training, but also during daily life activities

21

35 15 a.
80%

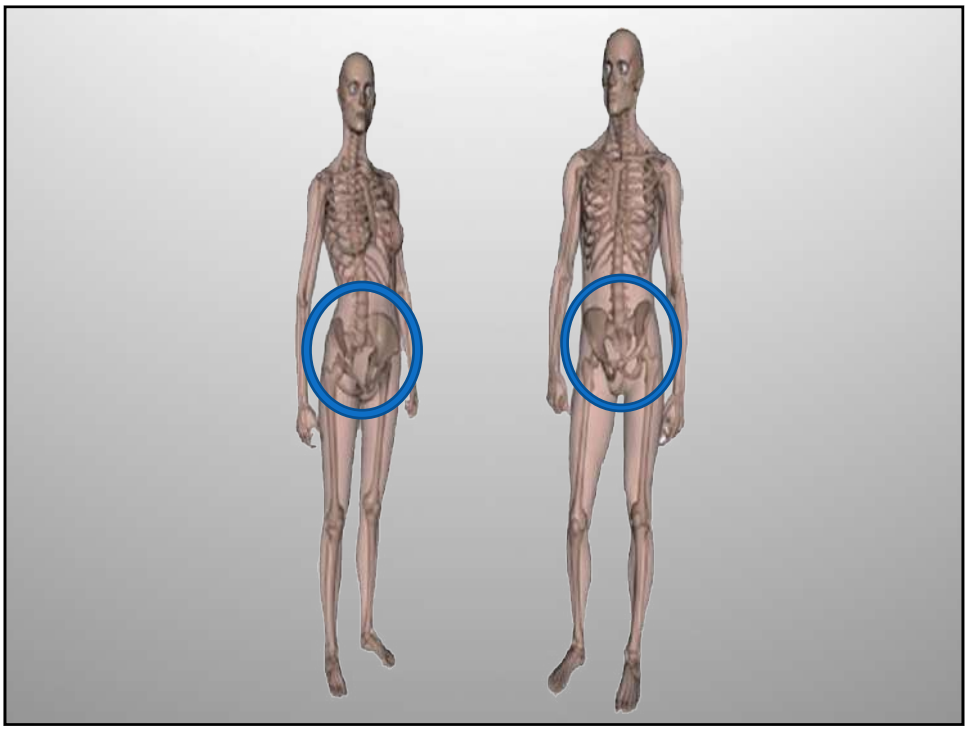
(Eliasson, Larsson & Mattsson, 2002)

Scand J Med Sci Sports. 2002 Apr;12(2):106-10.
Prevalence of stress incontinence in nulliparous elite trampolinists.
Eliasson K[1], Larsson T, Mattsson E.
Author information
Abstract
During trampoline jumping the pelvic floor is exposed to high forces. There has been a general belief that physically fit women have a strong pelvic floor as a result of their regular training, thus preventing urinary incontinence. The aim of this study was to survey the prevalence of stress urinary incontinence in female elite trampolinists.
The prevalence of urinary incontinence was assessed by a questionnaire, sent to all 35 elite trampolinists(mean age 15, range 12-22 years) in Sweden. Eighty percent of the trampolinists reported involuntary urinary leakage, but only during trampoline training. The leakage started after 2.5 (range 1-4) years of training. Age (P < 0.001), duration of training (P = 0.04), and training frequency (P = 0.01) were significantly associated with leakage. All women above 15 years of age (n = 23) reported urinary leakage (P < 0.001). Eighteen incontinent women continued the study and their leakage was verified by a pad test. The leakage averaged 28 g during a jump session. The muscle strength was measured with perineometry in 10 women and showed good strength in the pelvic floor muscles

22

AUTOR	VALENCIAS
Nygaard et al.	28% 48%
Nygaard et al.	,4% 35,8%
Bo et al.	% %
Eliasson et al.	80%
Thyssen et al.	43%
Araujo et al.	2 %
Eliasson et al.	%
Salvatore et al.	9%
Dos Santos et al.	7 % 75%
Virtuoso et al.	% ,6% 3,4%
Simeone et al.	%
Bo et al.	3%
Jacome et al.	%
Pérez et al.	5 % %
Vitton et al.	%

23



24

FACTORES POTENCIALMENTE LESIONALES DEL DEPORTE

IMPACTOS

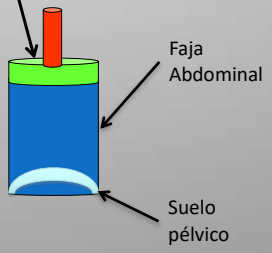
HIPERPRESIONES INTRABDOMINALES

25

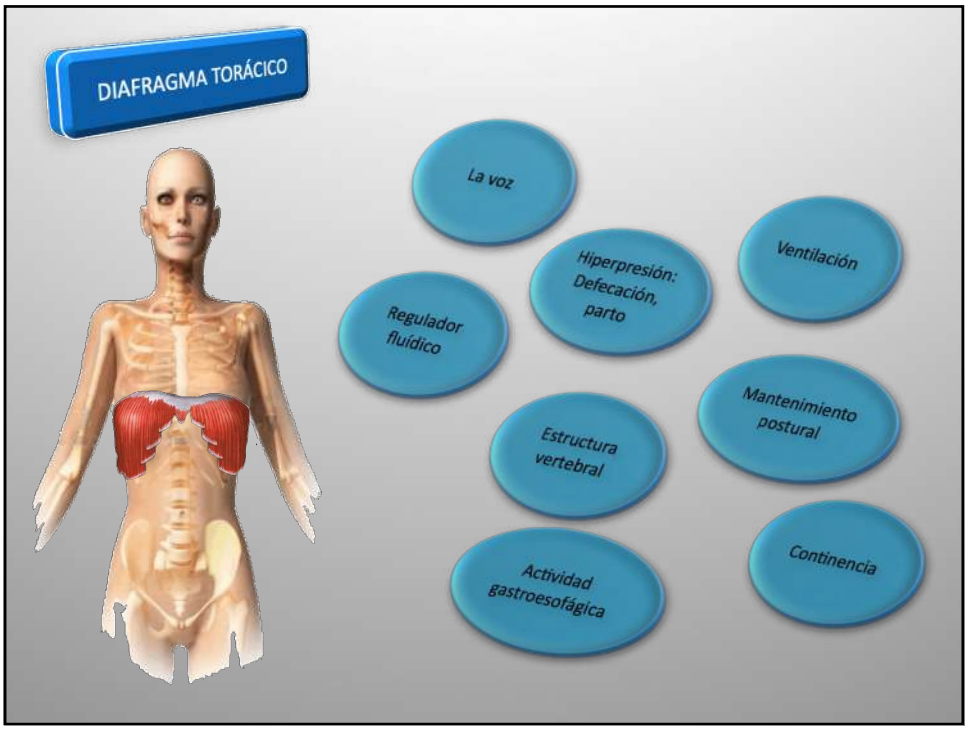
COMPARTIMENTO ABDOMINO-PÉLVICO

Presión intraabdominal (PIA)

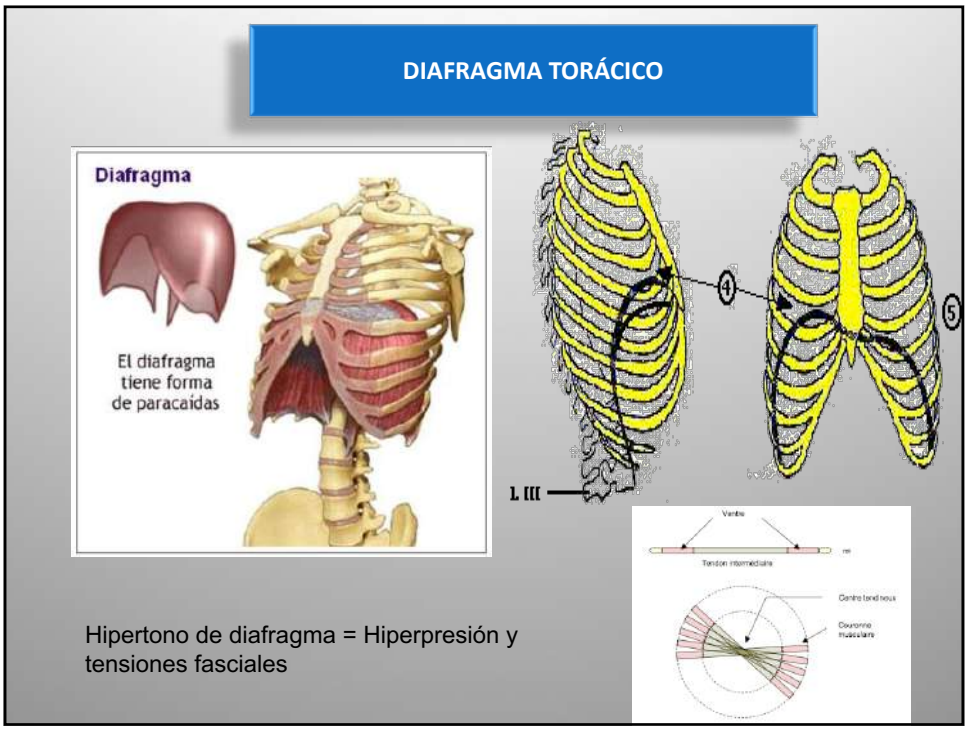
Presión intra Abdominopélvica (PIAP)



26


DIAFRAGMA TORÁCICO
La voz
Hiperpresión: Defecación, parto
Ventilación
Regulador fluídico
Mantenimiento postural
Estructura vertebral
Continencia
Actividad gastroesofágica

27


DIAFRAGMA TORÁCICO
Diafragma
El diafragma tiene forma de paracaidas
Hipertono de diafragma = Hiperpresión y tensiones fasciales

28

PALPACIÓN DIAFRAGMA TORÁCICO

29

FAJA ABDOMINAL

70% Tejido conectivo | 30% Fibras musc.

Tipo I : 70% | Tipo II : 30%

(Caix, Outrequin et Descottes, 1982)

Contención visceral

(Kapandji, 2007)

Gestión PIAP

(Brown, Banuelos, Ward & Lieber, 2010)

Postural

(Ferreira, Ferreira & Hodges,2004)

Continencia

(Sapsford & Hodges, 2001; Spasford et al., 2001)

Transmisor de fuerzas

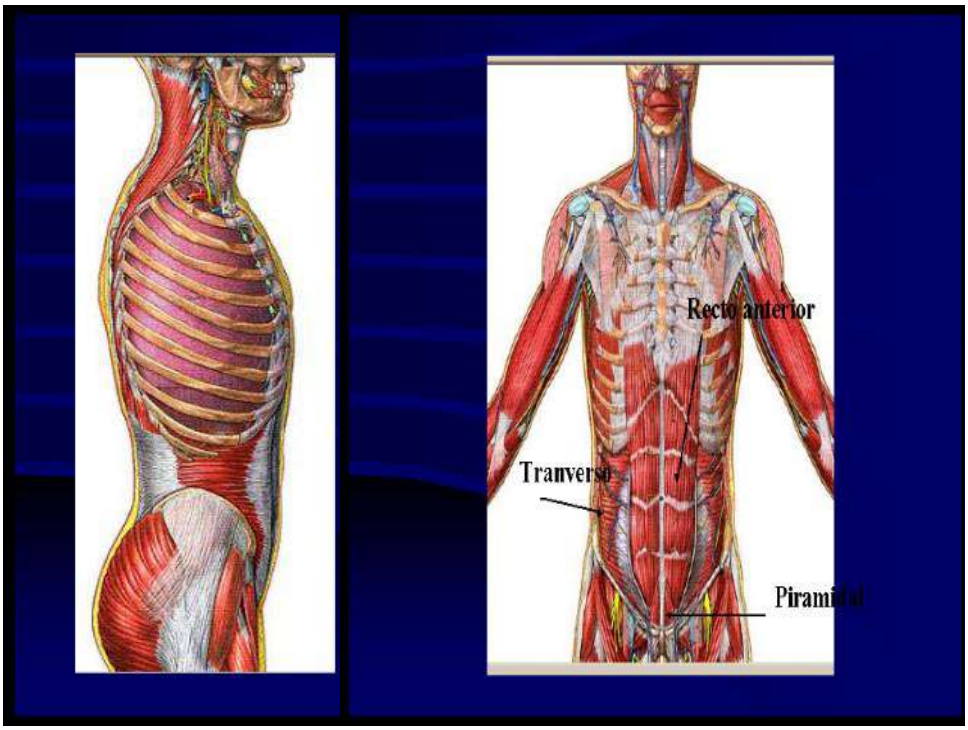
(Brown, Ward, Cook & Lieber, 2011)

Ventilación

(Kapandji, 2007)

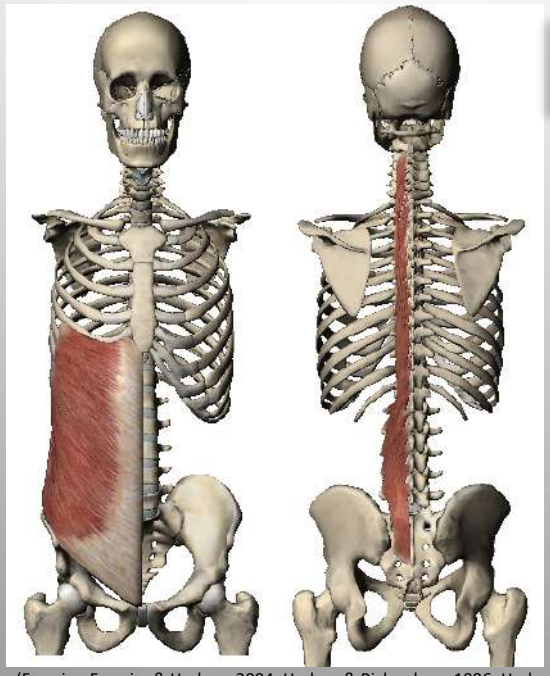
30

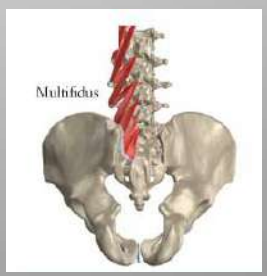
31



32

TRANSVERSO Y MULTÍFIDO

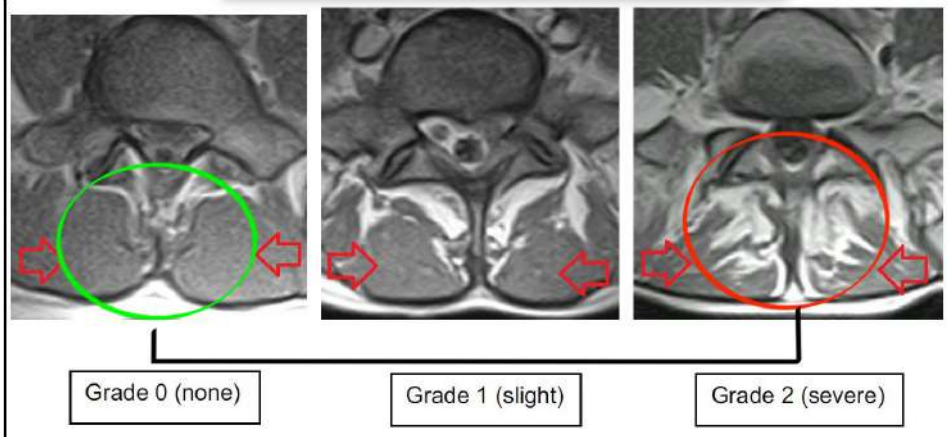




(Ferreira, Ferreira & Hodges, 2004; Hodges & Richardson, 1996; Hodges, Moseley, Gabrielson & Gandevia, 2003; Jull & Richardson, 2000)

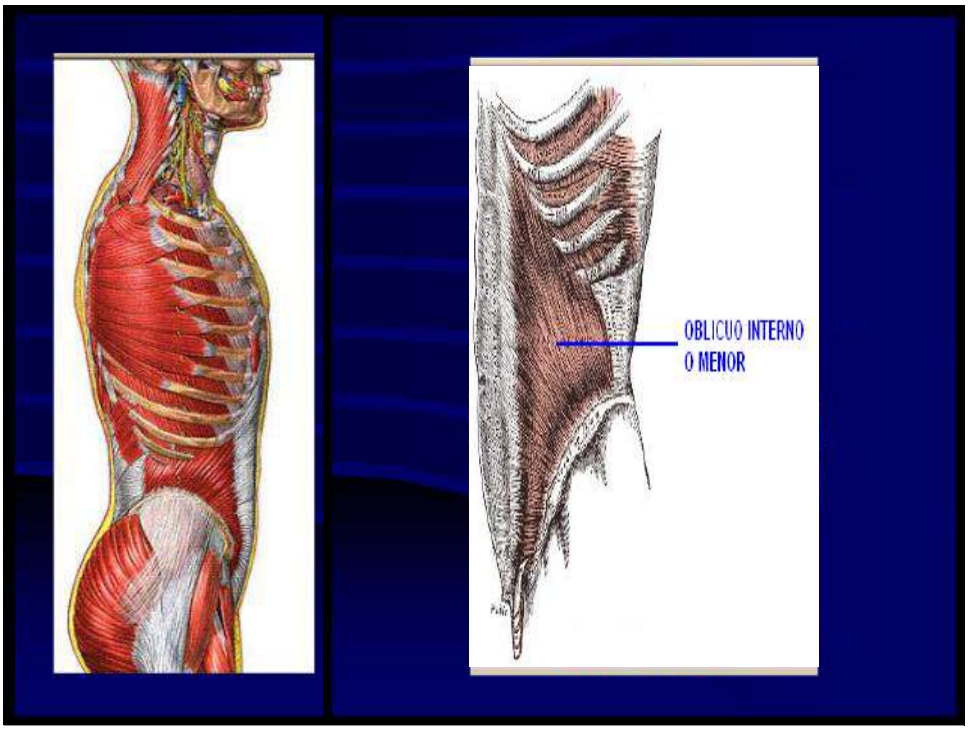
33

MULTÍFIDO CON DOLOR LUMBAR



(Kjaer P. et al, 2007)

34



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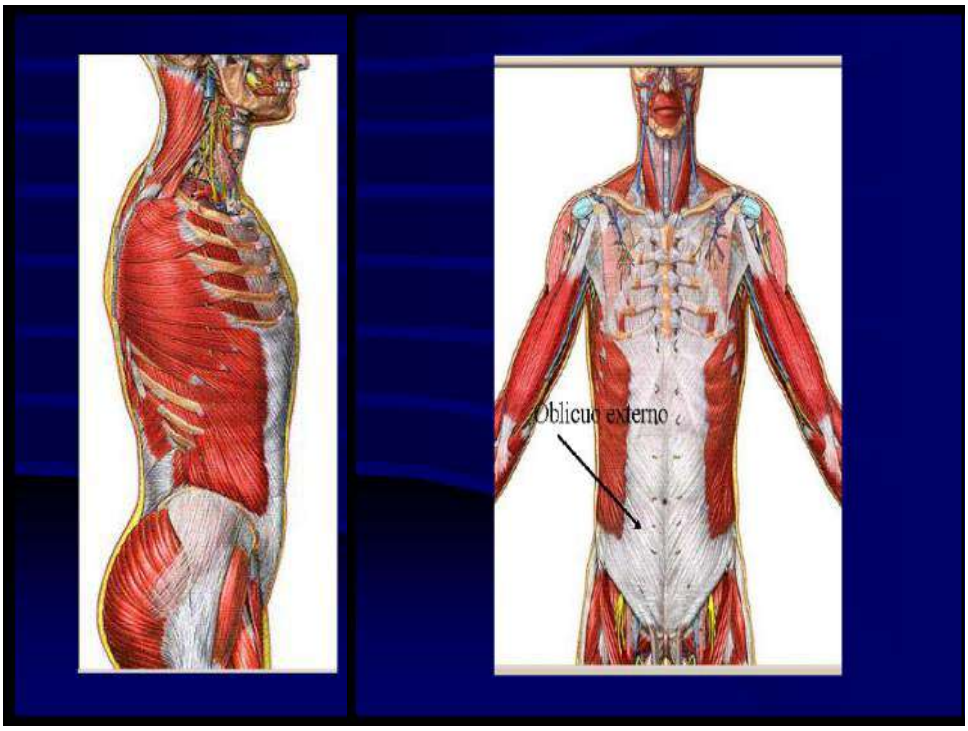

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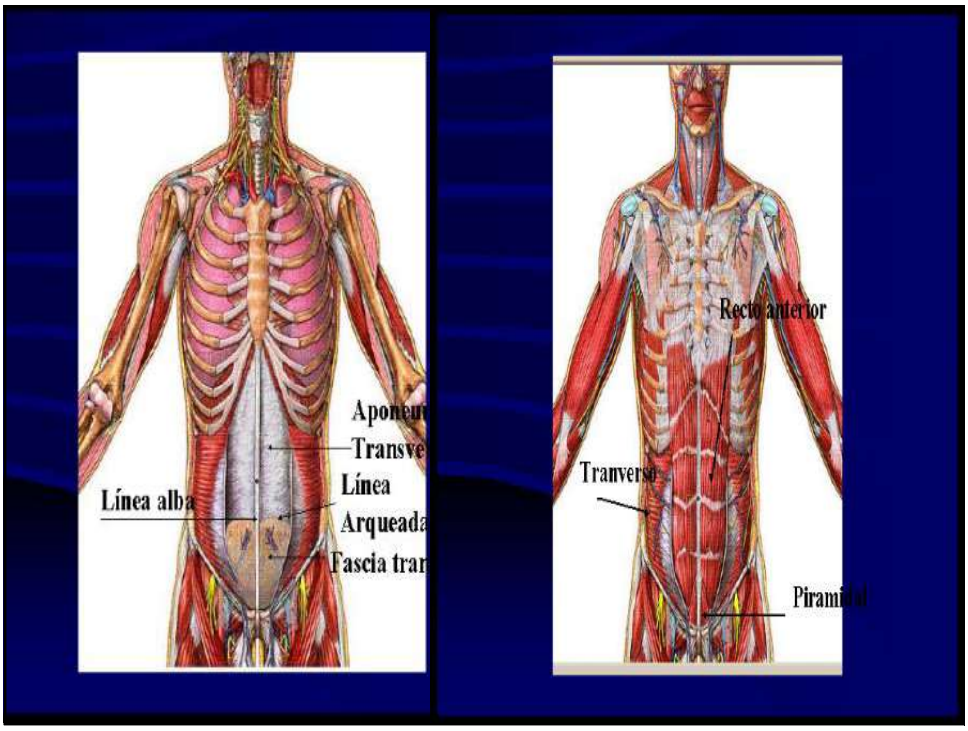
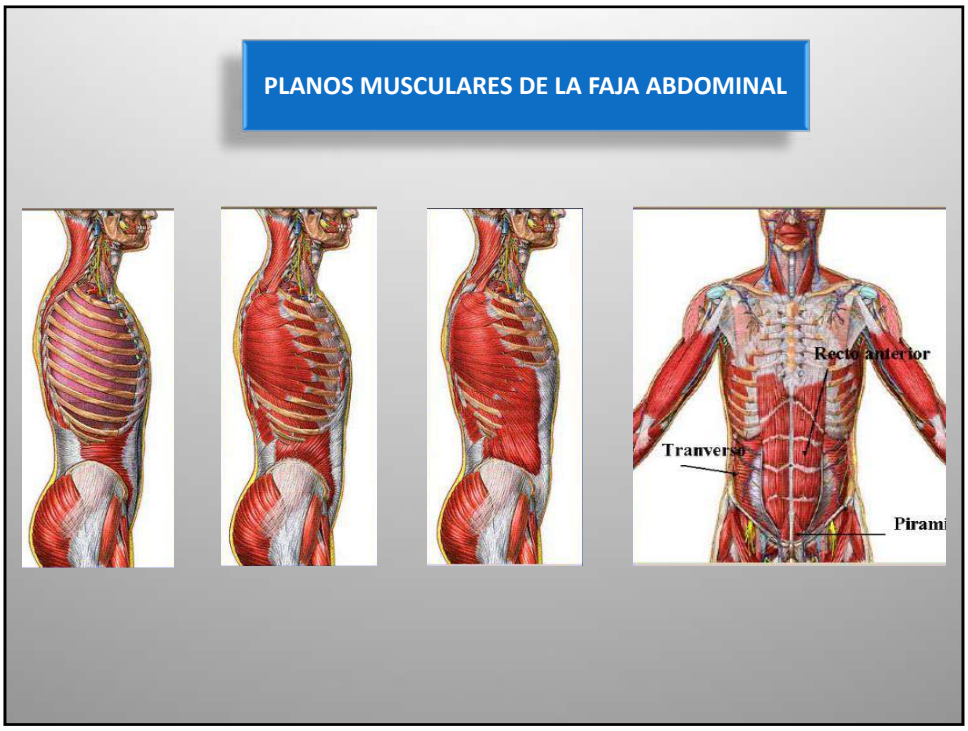
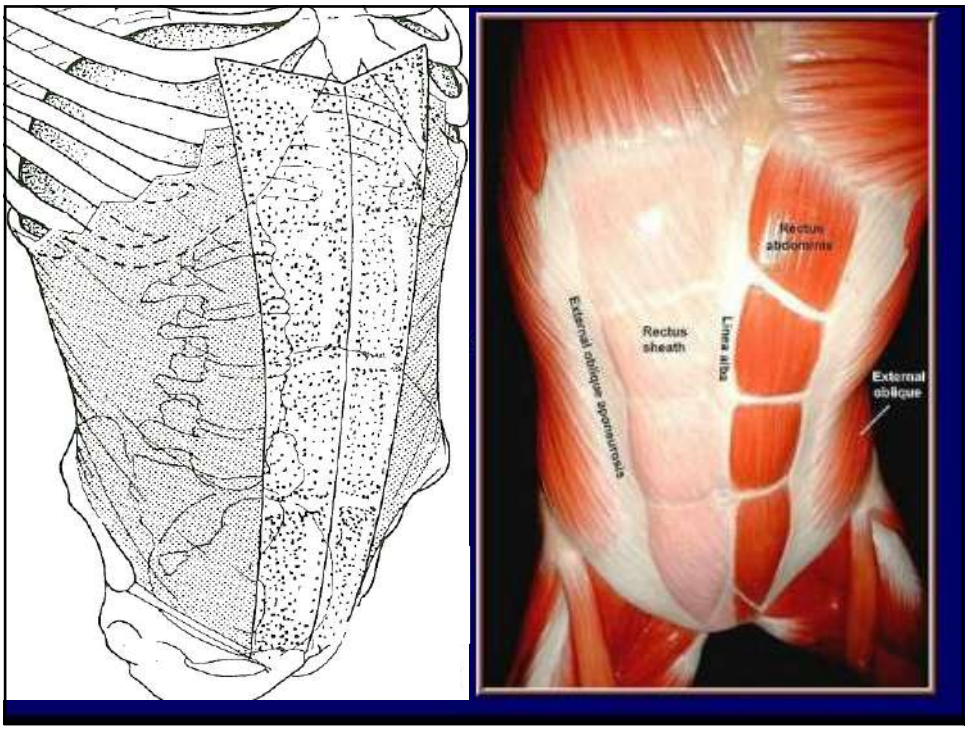

Línea alba
Línea
Arqueada
Recto anterior
Tranverso
Piramidal

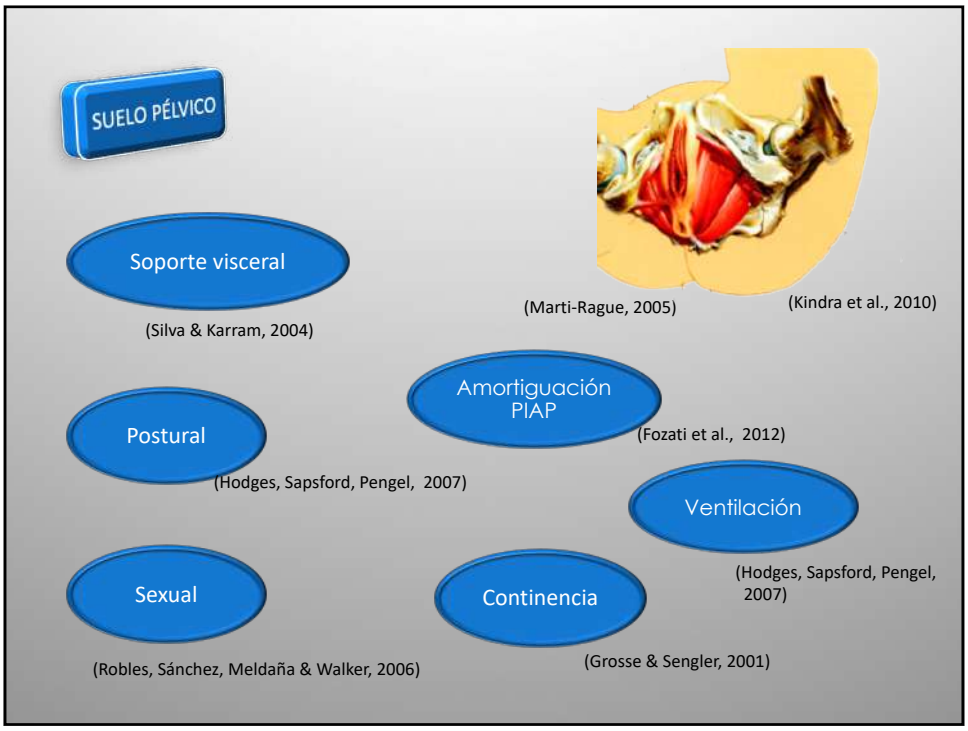
37


PLANOS MUSCULARES DE LA FAJA ABDOMINAL
Recto anterior
Tranverso

38

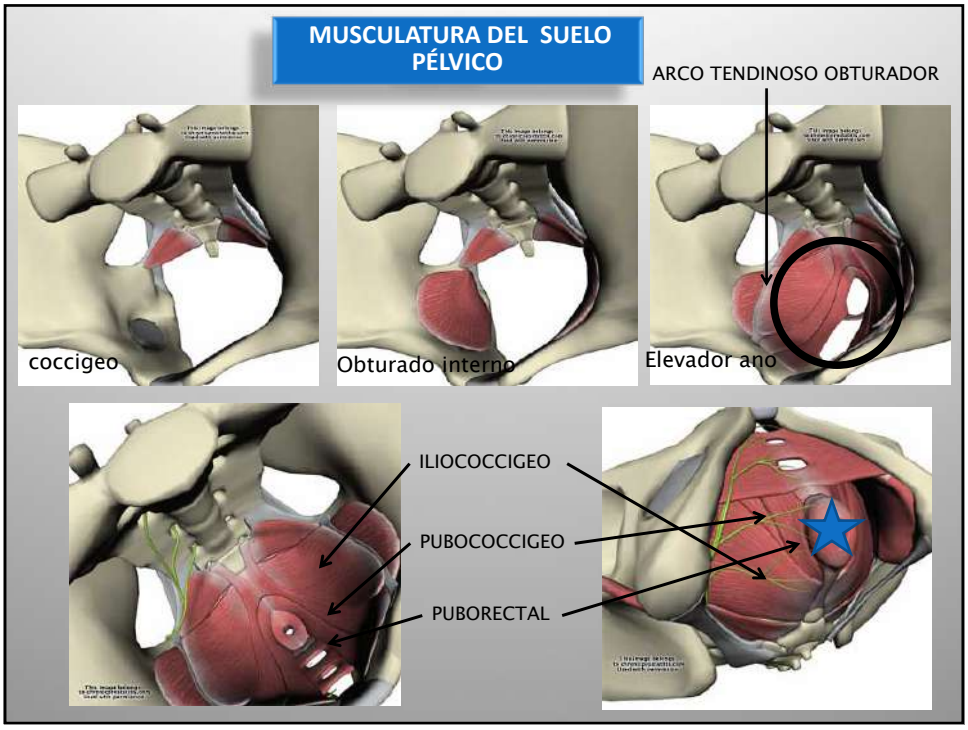

Rectus abdominis
Rectus sheath
Linea alba
External oblique aponeurosis
External oblique

39


SUELO PÉLVICO
Soporte visceral
(Silva & Karram, 2004)
(Marti-Rague, 2005)
(Kindra et al., 2010)
Amortiguación PIAP
(Fozati et al., 2012)
Postural
(Hodges, Sapsford, Pengel, 2007)
Ventilación
(Hodges, Sapsford, Pengel, 2007)
Sexual
(Robles, Sánchez, Meldaña & Walker, 2006)
Continencia
(Grosse & Sengler, 2001)

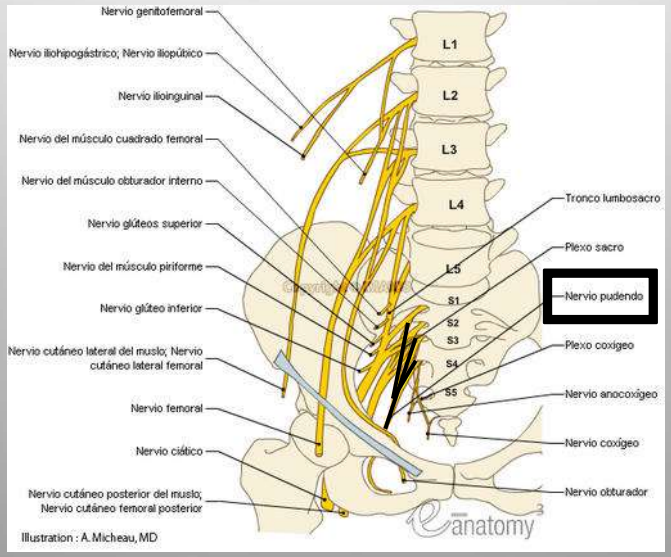
40

MUSCULATURA DEL SUELO PÉLVICO



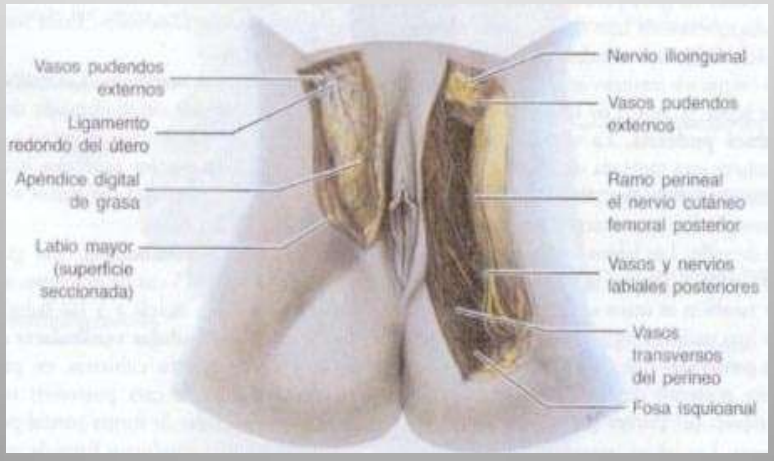
41

INERVACIÓN PÉLVICA



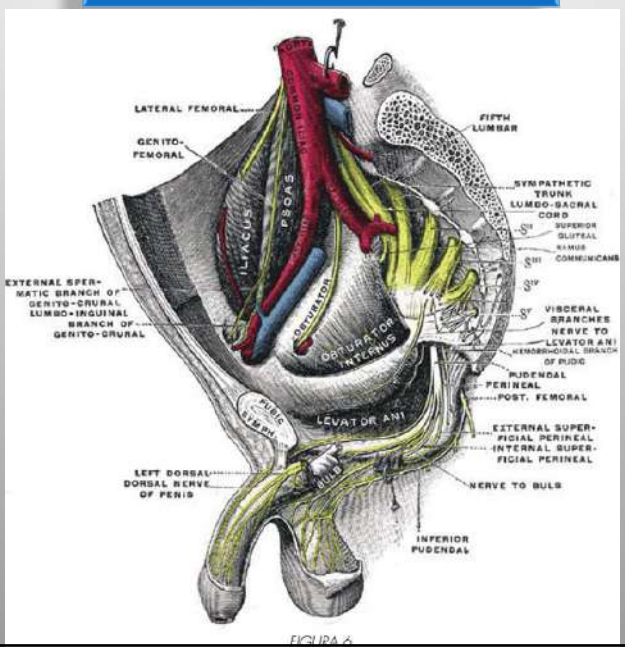
42

INERVACIÓN PÉLVICA



43

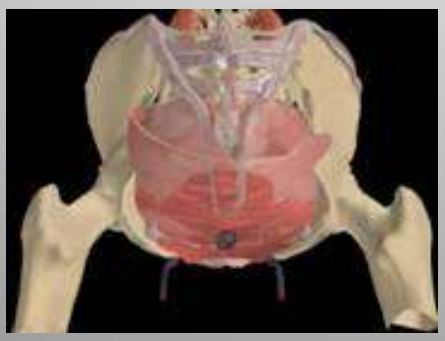
INERVACIÓN PÉLVICA

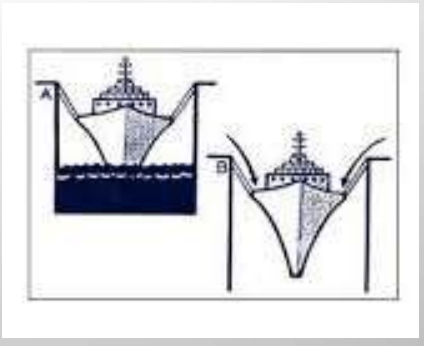


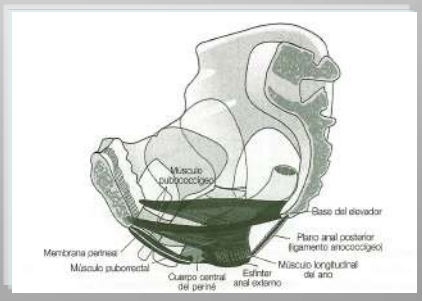
44

FASCIA ENDOPÉLVICA Y ELEMENTOS DE SUJECIÓN

Se la considera un elemento estático pero coordina con elevadores para cumplir funciones de micción, defecación y coito.

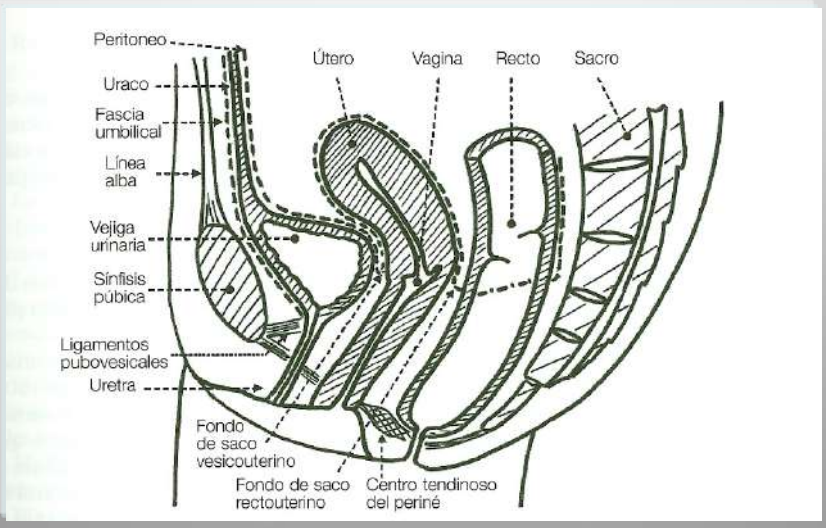






45

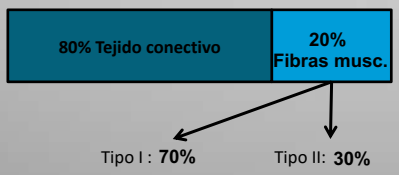
RELACIÓN ÓRGANOS Y TJD. CONECTIVO



46

(Petros & Woodman, 2008; Pilat, 2011)

(Caufriez, Fernández, Bouchant, Lemort & Snoeck, 2006)

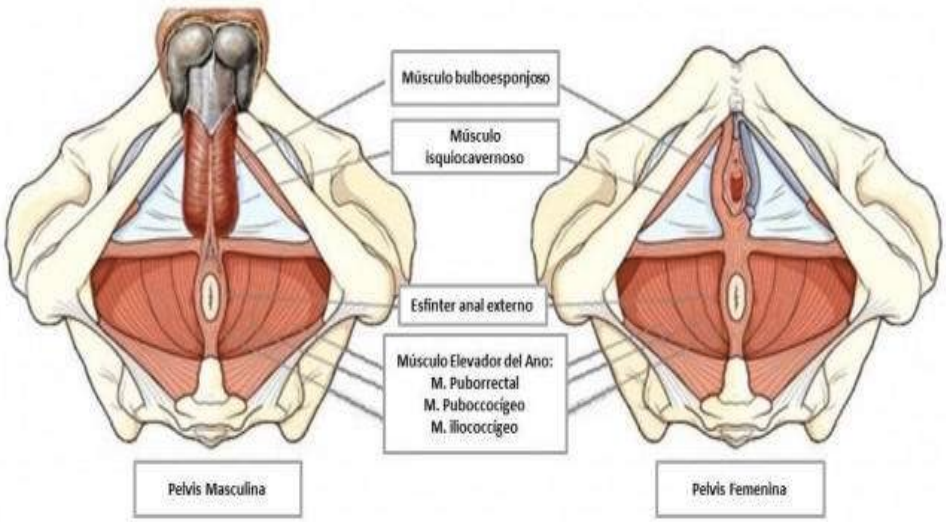


(Gilpin, Gosling, Smith & Warrell,1989)

(B. Calais-Germain, 2012)

47

DIFERENCIAS HOMBRE-MUJER



48

DISFUNCIONES URO-GINECOLÓGICAS

(Rouanet et al., 2008)

Etiologia

Genéticas: Alt. Colágeno

(Petros & Woodman, 2008)

Hormonales

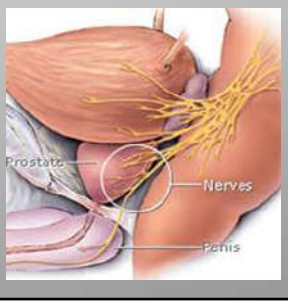
(Basha et al. 2013; Segedi et al. 2011)

Traumas

(Friedman et al., 2012)

Denervaciones

(de Tayrac, Panel, Masson & Mares,2006)



49

DISFUNCIONES URO-GINECOLÓGICAS

(Rouanet et al., 2008)

Etiologia

Postura hiperlordótica

(Brusciano et al., 2009)

Aumento PIAP

(Chen et al., 2009; Davis & Kumar, 2003)

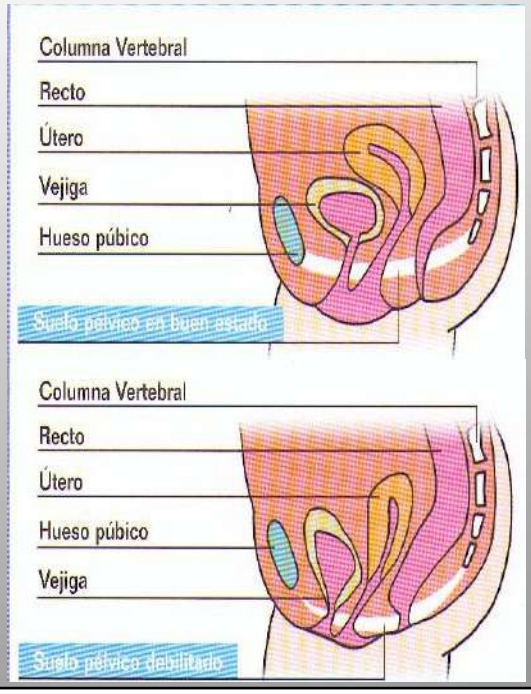
50

Tipos de dis-funciones

Dolor miofascial y endopélvico
(Abrams et al., 2003)

Disfunción sexual
(Kammerer-Doak, 2009)

Prolapsos
(Word, Pathi & Schaffer, 2009)



51

INCONTINENCIA URINARIA
(Starczewski, Brodowska & Brodowski, 2008)

TIPOS

MIXTA (IUM)
(Schumacher, 2005)

URGENCIA (IUU)
(Coyne, Zhou,Thompson & Versi, 2003)

ESFUERZO (IUE)
(Castro et al., 2008)

PREVALENCIA
(Dumoulin & Hay-Smith, 2010)

IV Congreso ICI 35%
(Buckley & Lapitan, 2010)

ONI 24%
(ONI, 2012)

ONI 7%

52

HIPERPRESIONES

(Sosa, Sánchez & Hernández, 2007)

Presión intra Abdominopélvica (PIAP)

Hipopresivo DP ≤ 0 mm Hg
Hiperpresivo DP ≥ 30 mmHg

(Esparza, 2001)

(Caufriez, Pinsach & Fernández, 2010)

(Meldaña 2004 Robles, 2006; Vierhout & Terlouw, 2001; Word et al., 2009),)

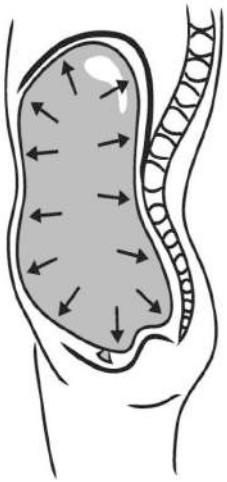
(Jozwik, 1993)

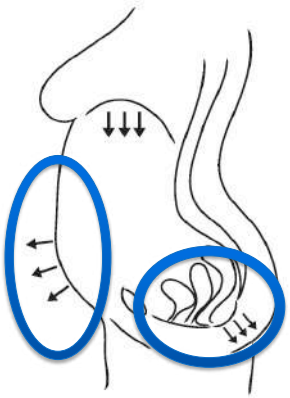
(Junginger et al., 2010)

Cantidad
Frecuencia
Gestión

53

GESTIÓN DE LA PRESIÓN INTRABDOMINOPÉLVICA





54

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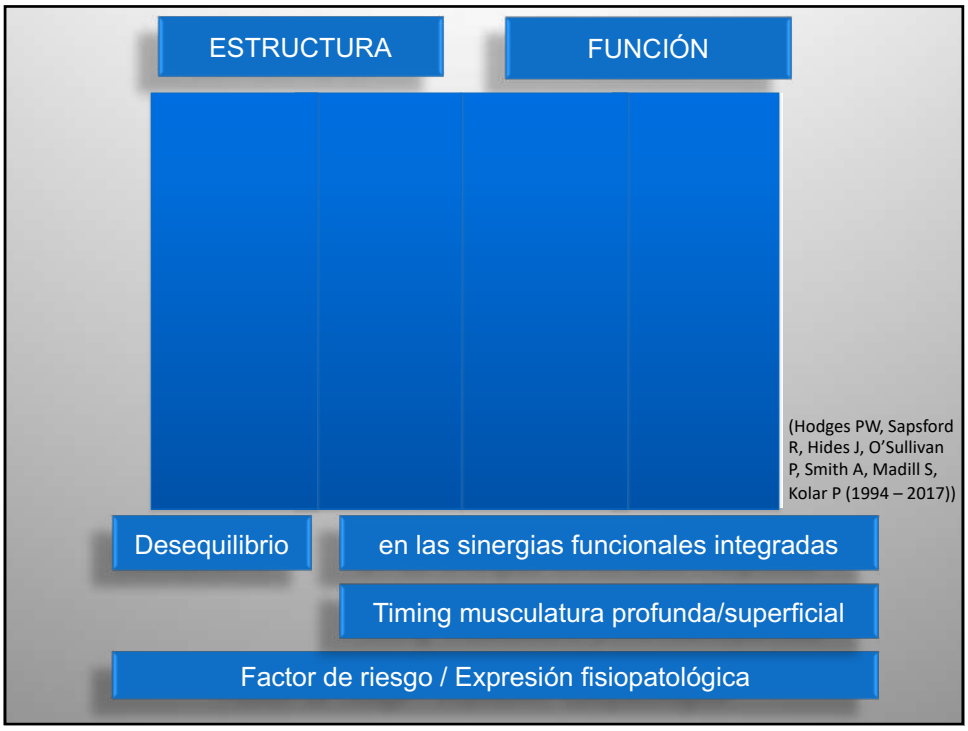
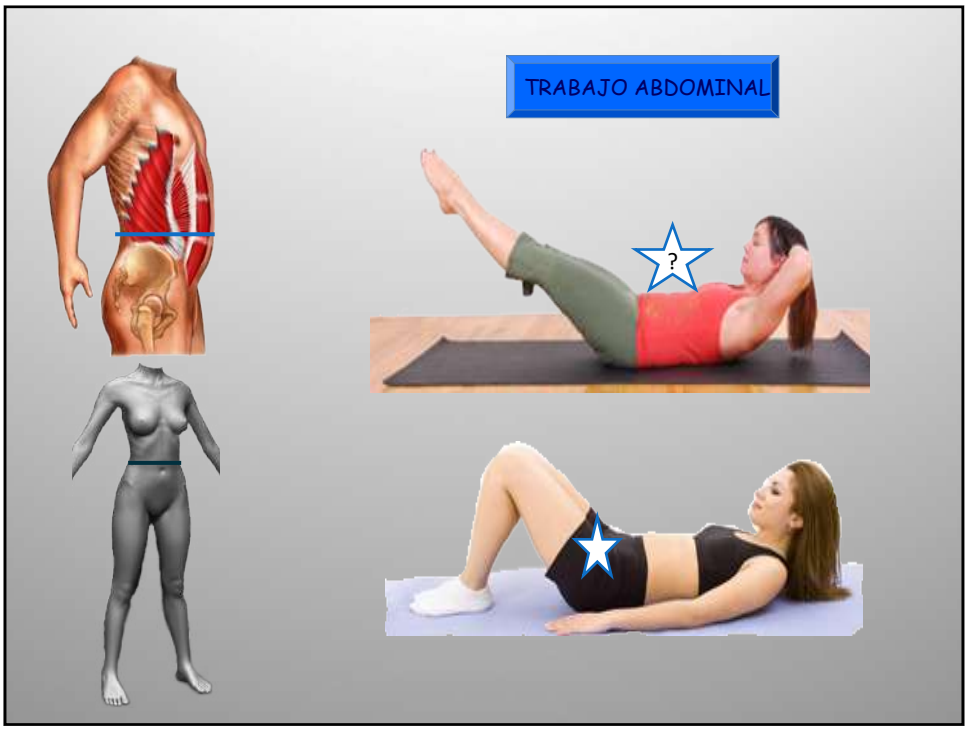
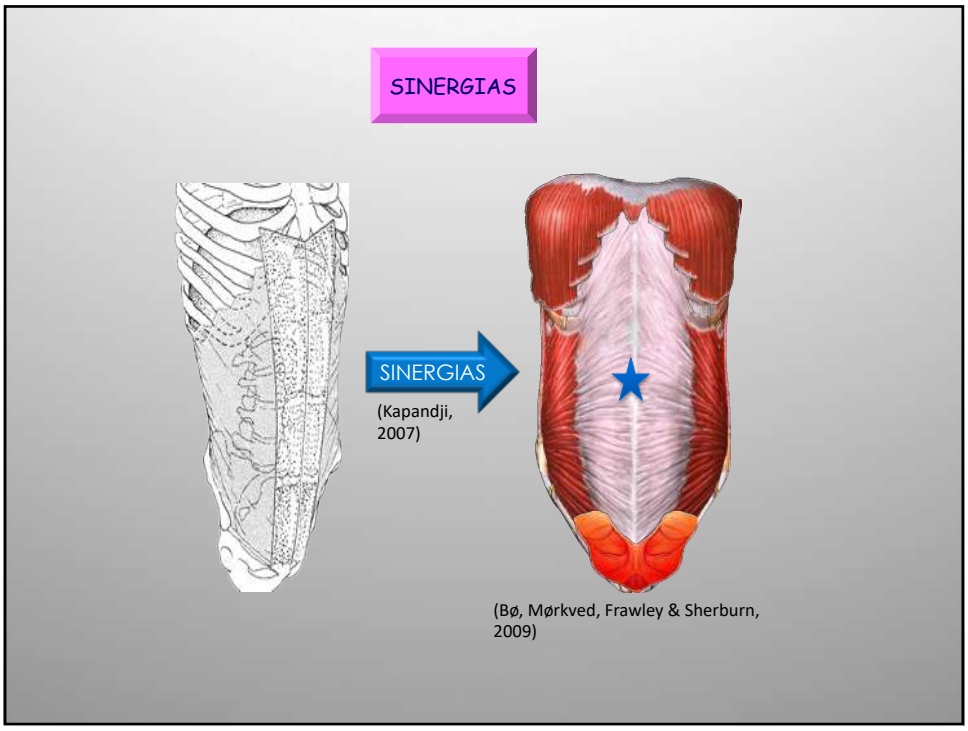
56


ESTRUCTURA
FUNCIÓN
(Hodges PW, Sapsford R, Hides J, O'Sullivan P, Smith A, Madill S, Kolar P (1994 – 2017))
Desequilibrio
en las sinergias funcionales integradas
Timing musculatura profunda/superficial
Factor de riesgo / Expresión fisiopatológica

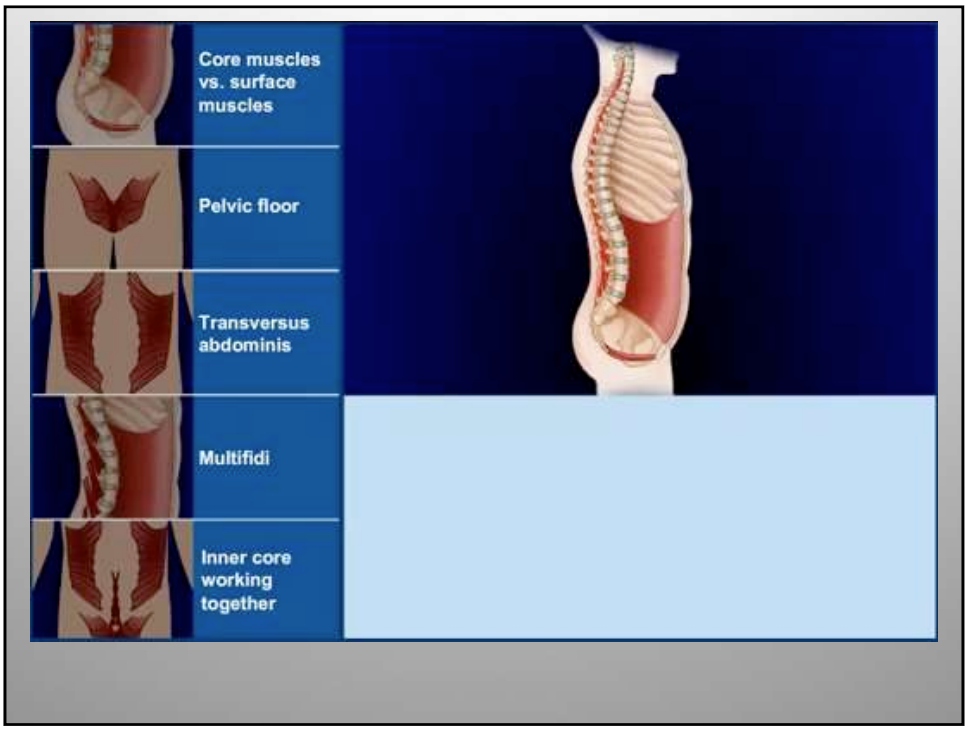
57


TRABAJO ABDOMINAL
?

58


SINERGIAS
SINERGIAS
(Kapandji, 2007)
(Bø, Mørkved, Frawley & Sherburn, 2009)

59


Core muscles vs. surface muscles
Pelvic floor
Transversus abdominis
Multifidi
Inner core working together

60

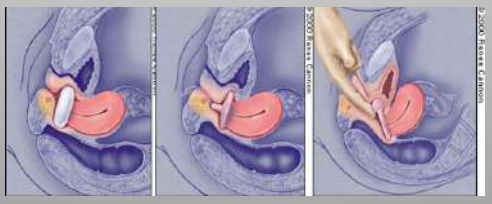
PRINCIPIOS PREVENTIVOS PARA EL SUELO PÉLVICO EN EL DEPORTE Y PRÁCTICA FÍSICA

"The pelvic floor muscles need to be much stronger in elite athletes than in other women. "

(Bo, 2004)

"Use of preventive devices such as vaginal tampons or pessaries can prevent leakage during high impact physical activity."

(Bo, 2004)


61

HIPOPRESIVOS

Técnicas de aspiración diafragmática Marcel Caufriez 1980

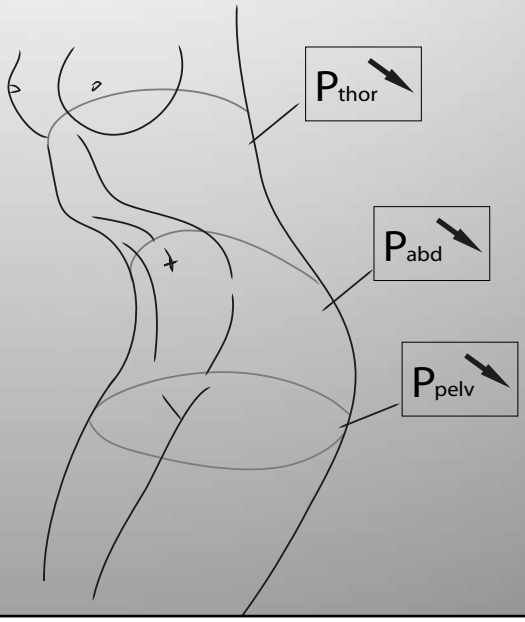
Teoría neuromiostática


62

EFECTOS BAROMÉTRICOS DE LA HIPOPRESIÓN

Disminución presión intraabdominal
(Caufriez et al; 2007)

Captores de presión



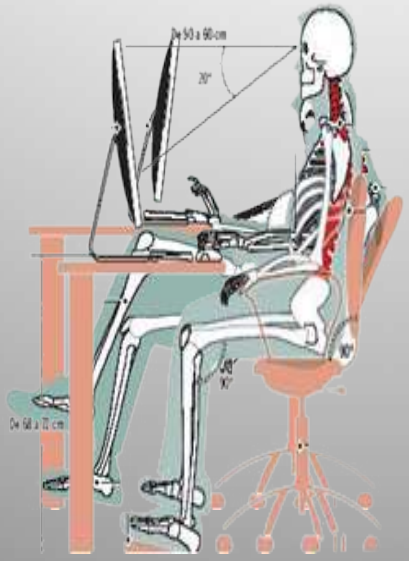
63

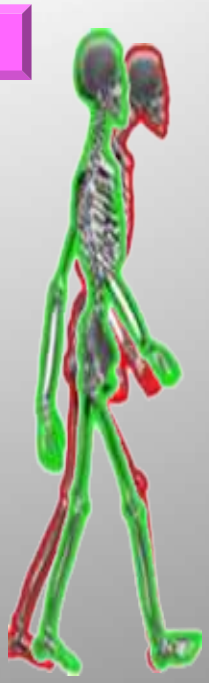
Base hipopresiva

- Activación propioceptores (Caufriez, 1999)
- Interoceptores (Caufriez et al., 2006)
- Baroceptores (Caufriez, Fernández, Esparza & Schulmann, 2007)
- ↓O_2 ↑CO_2

64

HIGIENE POSTURAL





65

RECEPTORES POSTURALES

Los ojos

Determinan la inclinación y la posición de la cabeza en el plano frontal

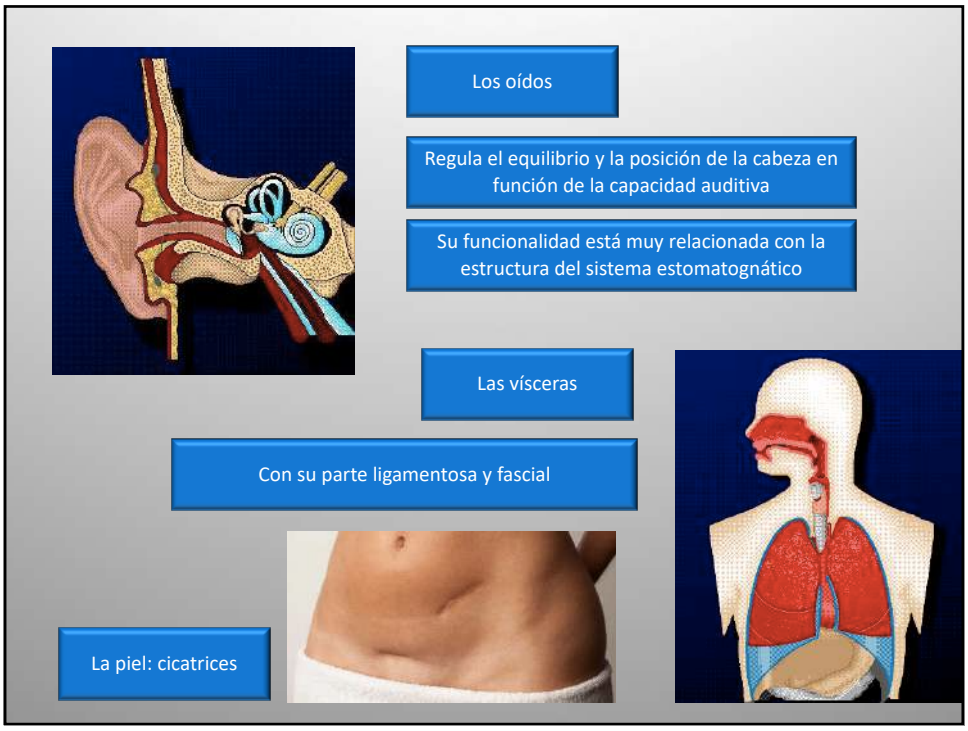
Hay correlación entre la musculatura extrínseca del ojo, de la boca y del cuerpo

Los pies

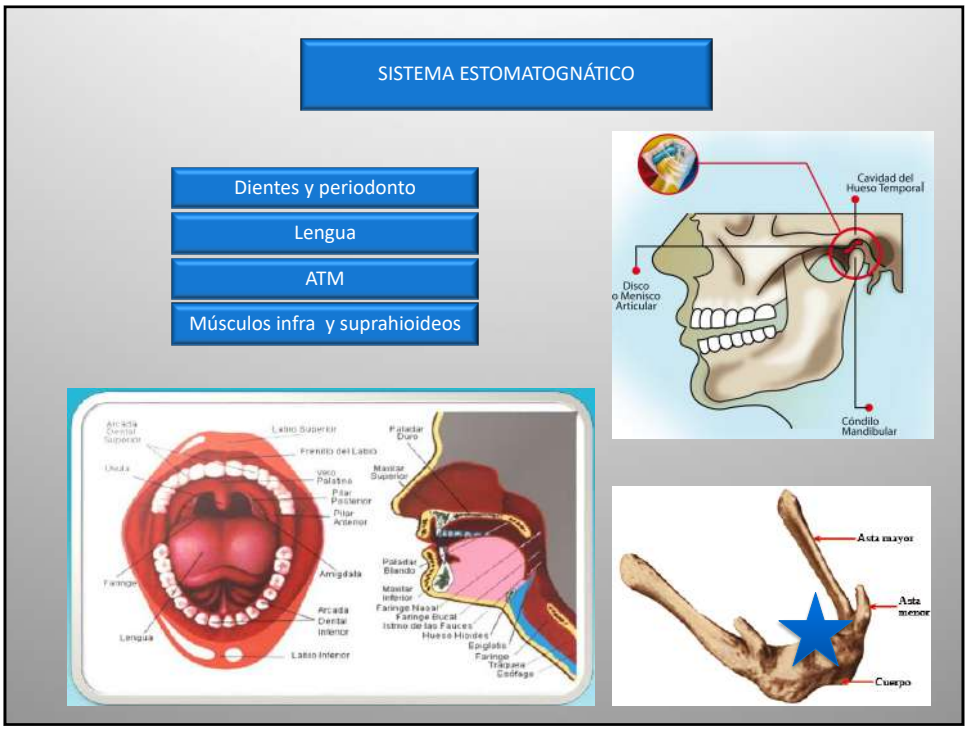
Terminal de apoyo y reequilibrio de cualquier situación no compensada en los niveles superiores

Estructura móvil y adaptable

66


Los oídos
Regula el equilibrio y la posición de la cabeza en función de la capacidad auditiva
Su funcionalidad está muy relacionada con la estructura del sistema estomatognático
Las vísceras
Con su parte ligamentosa y fascial
La piel: cicatrices

67


SISTEMA ESTOMATOGNÁTICO
Dientes y periodonto
Lengua
ATM
Músculos infra y suprahioideos
Cavidad del Hueso Temporal
Disco o Menisco Articular
Cóndilo Mandibular
Asta mayor
Asta menor
Cuerpo

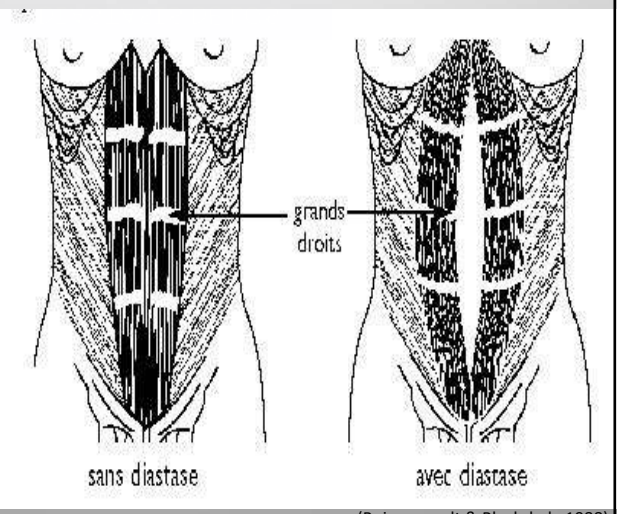
68

DIÁSTASIS DE LOS RECTOS ABDOMINALES

53%

(Candido & Janssen, 2005)

67%



(Boissonnault & Blackshak, 1988)

69

POSTURA QUE PERSISTE TRAS EL EMBARAZO

70


OTROS MÉTODOS DE TONIFICACIÓN Y FORTALECIMIENTO

71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72