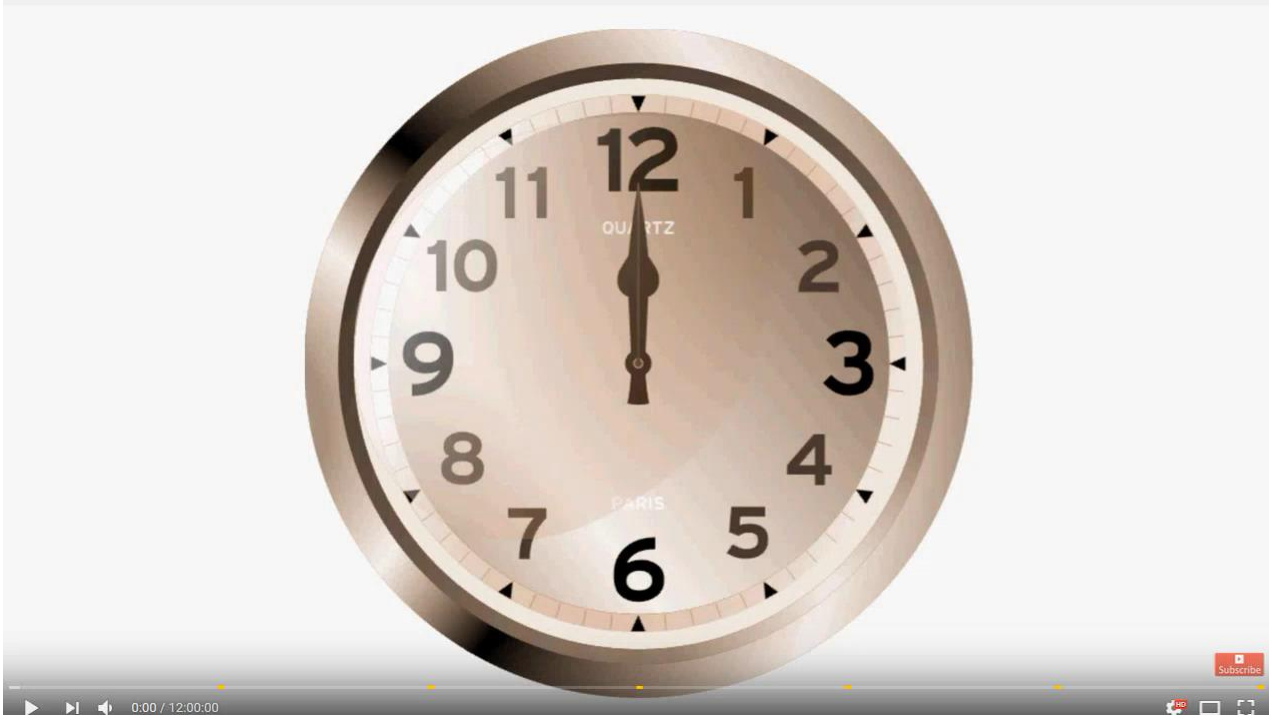
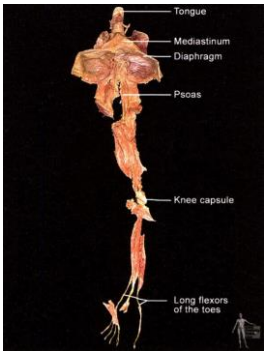
Ademhaling - theorie

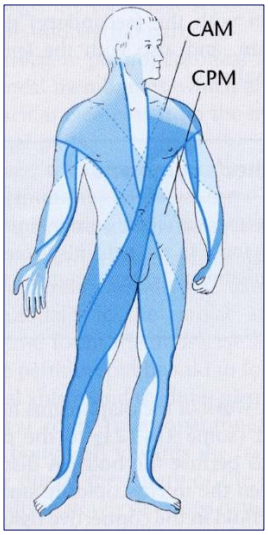
Chronische bekkenpijn
Basismodule ProFundum



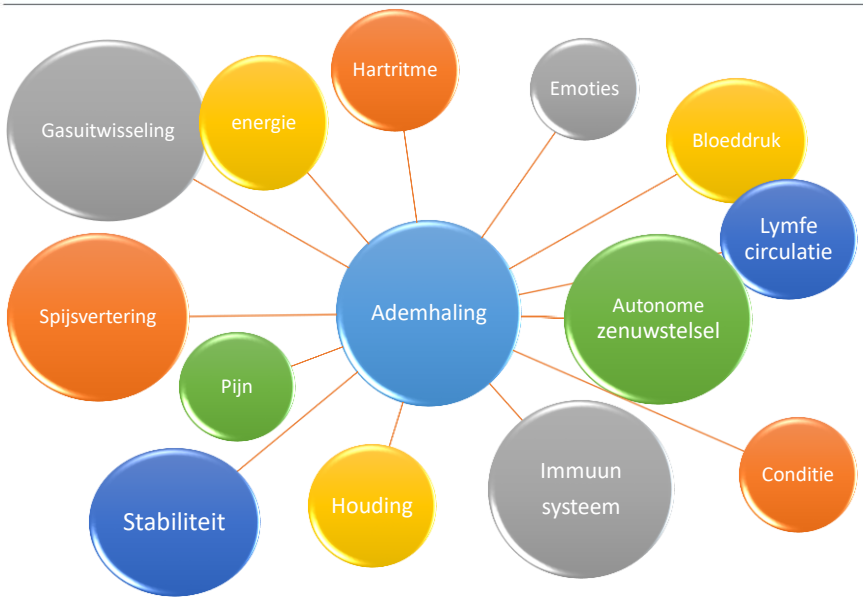
'If breathing is not normalised no other movement pattern can be'

(Lewit 1980)





3

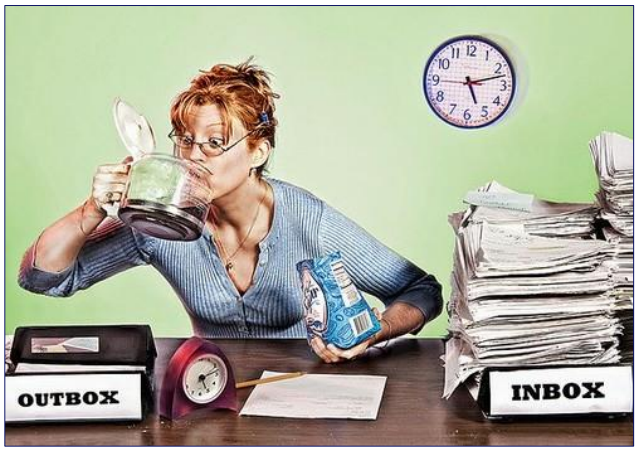


4

Disfunctioneel ademen

Waar gaat het fout?

"we are too busy to breathe well"
(Mary Bond)



5

Andere factoren

6

Ademhaling en zuurgraad

Table 4.1 Relationship between arterial pH and $Paco_2$, with effects

	pH	$Paco_2$	Effects
Acidosis			
	7.1	90–100+	Coma
	7.2	70	Hypercapnia symptoms (drowsiness, confusion)
	7.3	50	Breathing reflex stimulated
	7.4	**40**	**Normal**
	7.5	30	Mild hypocapnia symptoms (light-headedness, weakness), breathing reflex suppressed
	7.6	20	Moderate hypocapnia symptoms (paresthesias, confusion, twitches)
	7.7	10	Coma
	7.8+	0	Death
Alkalosis			

Effecten pH stijging

- Vasoconstrictie
- Verminderde doorbloeding hersenen en spieren
- Verminderde zuurstof afgifte in spieren (-> myofascial pain)
- Verlaging pijndrempel
- Toename angst

(Uit Chaitow 2014)

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Adaptie op overademen

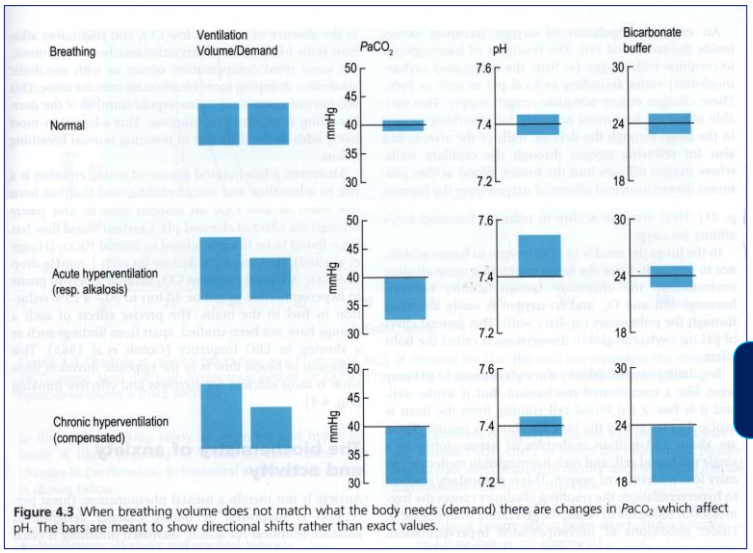

Figure 4.3 When breathing volume does not match what the body needs (demand) there are changes in $PaCO_2$ which affect pH. The bars are meant to show directional shifts rather than exact values.

(Uit Chaitow 2014)

Homeostatische instabiliteit

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Over-ademen

Versnelde ademhaling is mogelijk het gevolg van:

- te veel of niet functionele hersenactiviteit
- Anticipatie op actie
- CO2 overgevoeligheid
- Ontzuring van het lichaam?

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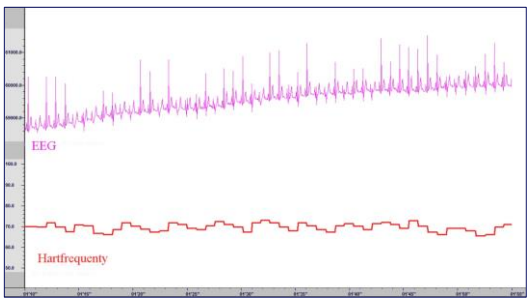
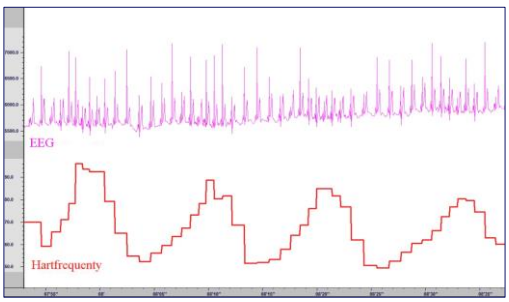
Hartritmevariatie (h.r.v.)



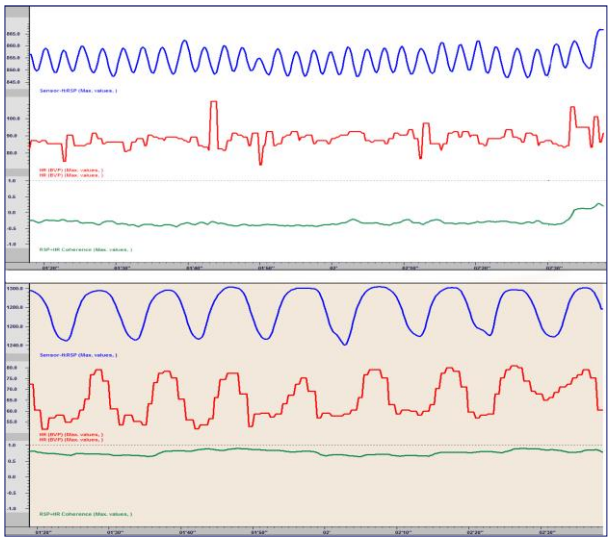
Hartfrequentie = 70
h.r.v. = 10



Hartfrequentie = 70
h.r.v. = 40

10

Respiratoire Sinus Arythmia



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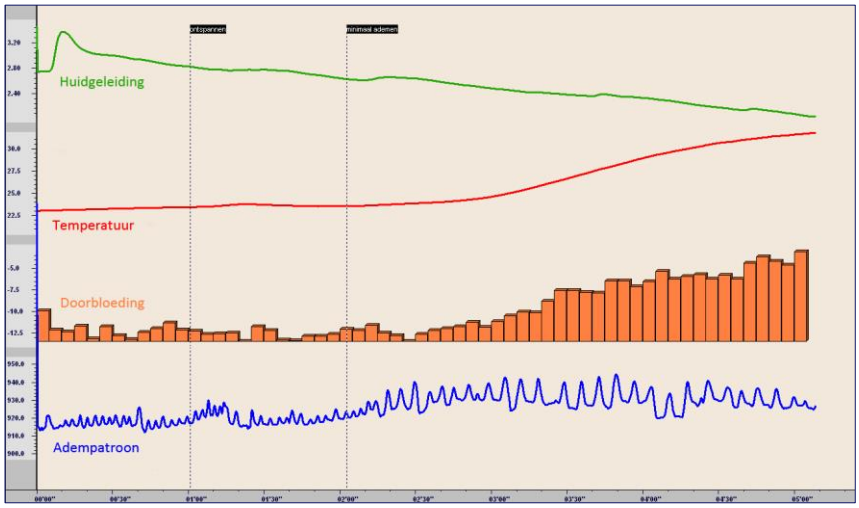
Invloed ademhaling op autonome z.s.



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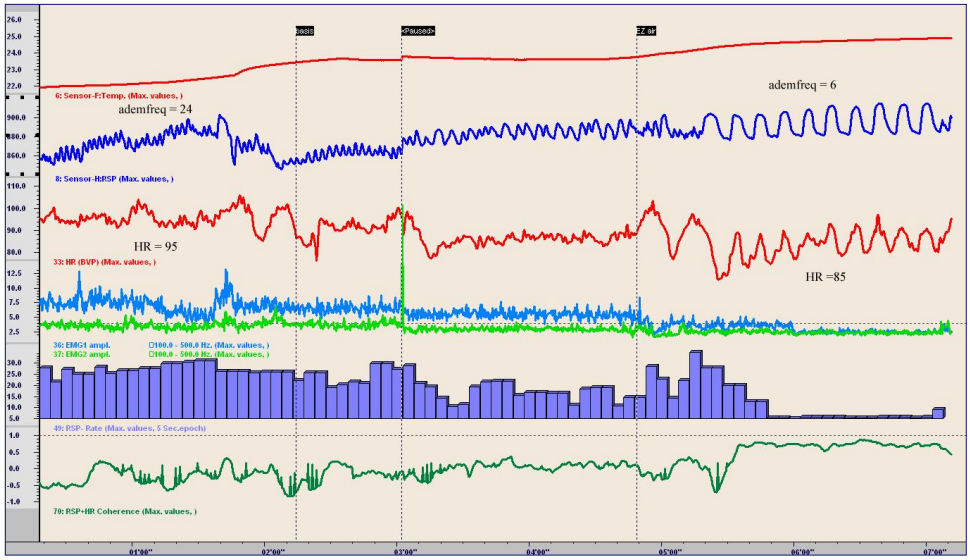
Ademhaling en spierspanning



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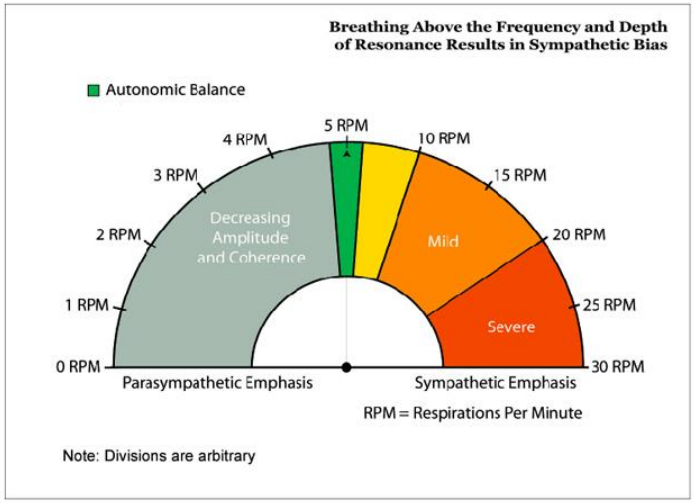
Ademfrequentie en autonome zenuwstelsel



Breathing above the frequency of resonance results in sympathetic bias

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Ademhaling en emoties

Let op ‘pantseren’

‘Belly issues’

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Myofascia van de ademhaling

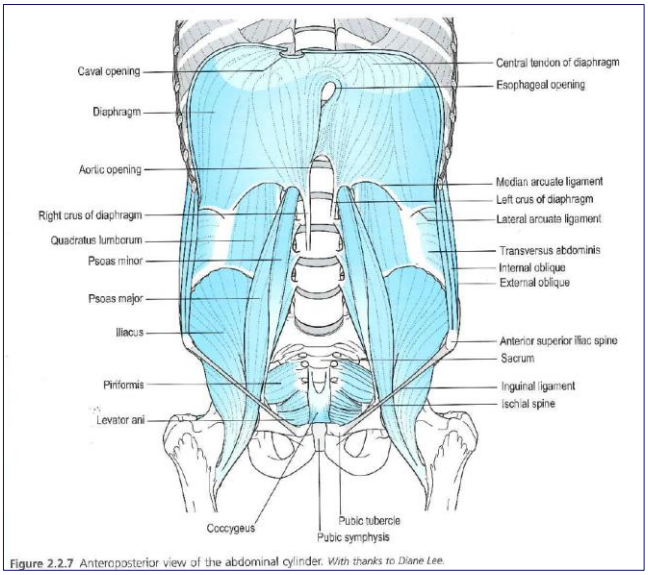

Figure 2.2.7 Anteroposterior view of the abdominal cylinder. *With thanks to Diane Lee.*

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Abdominal balloon

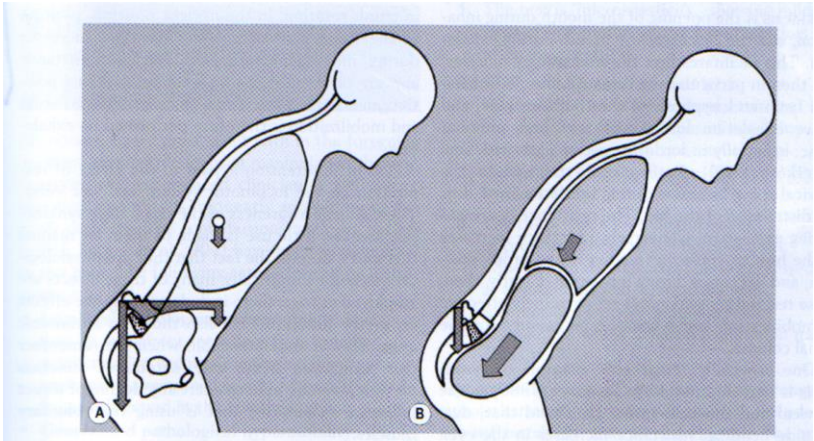

Figure 2.19 • The stress on the lumbosacral junction (A) without and (B) with simultaneous contraction of the abdomina wall (Diagram after Kapandji).

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Pilatus ‘powerhouse’

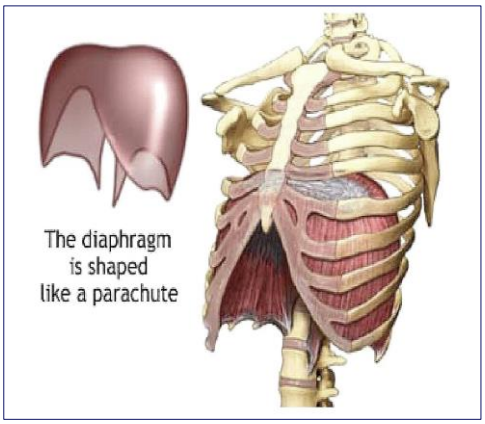
18

Massage van de ingewanden

Diafragma

Diafragma:

- ademhaling
- stabiliteit
- sphincter
- voedseltransport
- lymfetransport



'The diaphragm is not just an inspiratory muscle but is involved in the vitalization of the whole human body.'

(Paoletti, 2006)

Diafragma

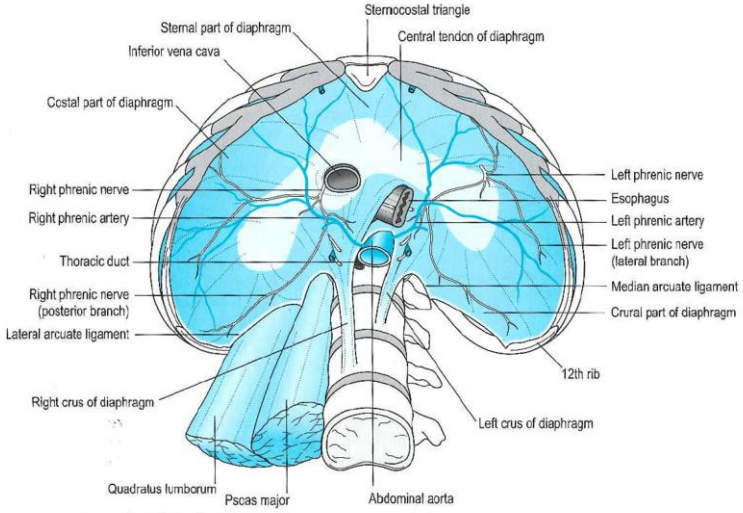


Figure. 2.2.9 Inferior view of the diaphragm.

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Hulpademhalingsspieren

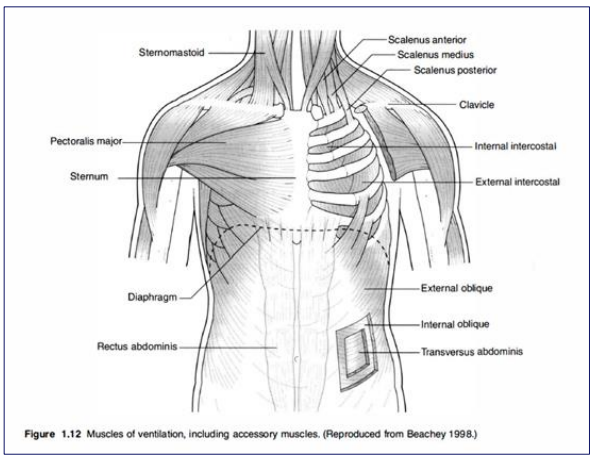

Figure 1.12 Muscles of ventilation, including accessory muscles. (Reproduced from Beachey 1998.)

….. of hinderademhalingsspieren?

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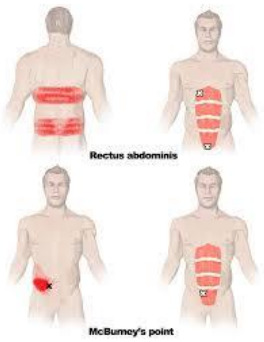
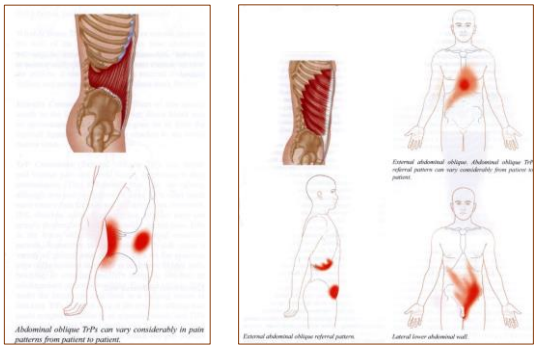
Triggerpoints

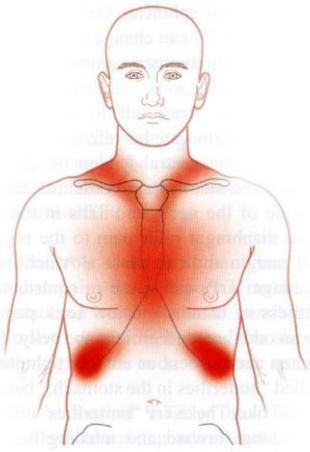


Rectus abdominis

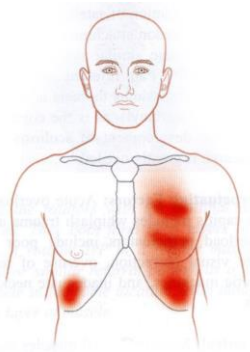


Obliquus abdominis

Triggerpoints

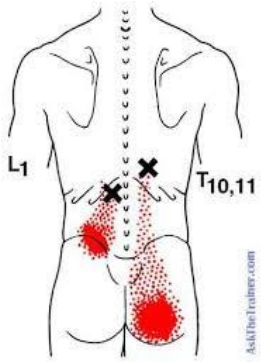


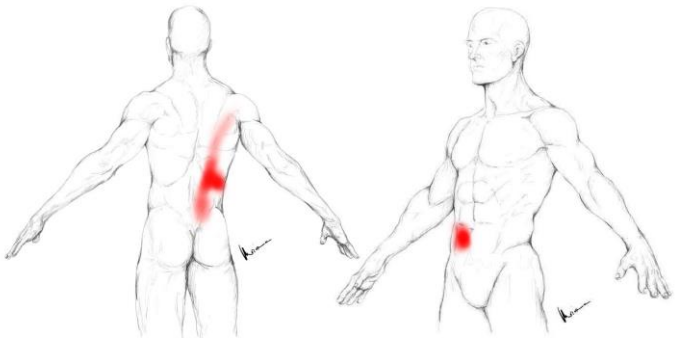
diafragma



intercostals

Triggerpoints





Onderzoek: Nijmeegse vragenlijst

Nijmeegse vragenlijst:

Checklist

Naam:
Datum: 7-12-18

Instructie:
Kruis voor elke vraag aan of u deze klachten nooit, zelden, soms, vaak of zeer vaak hebt gehad.

	nooit	zelden	soms	vaak	heel vaak
1) pijnlijke steken in de borst				X	
2) gespannenheid					X
3) een waas voor de ogen				X	
4) duizeligheid				X	
5) in de war zijn, of het gevoel hebben het normale contact met de omgeving te verliezen				X	
6) een snellere of diepere ademhaling				X	
7) ademnood				X	
8) benauwd voelen in of rond de borst				X	
9) opgeblazen gevoel in de buik					X
10) tintelingen in de vingers				X	
11) niet voldoende diep kunnen doorademen				X	
12) stijfheid van vingers of armen				X	
13) stijfheid rond de mond				X	
14) koude handen of voeten				X	
15) bonzen van het hart				X	
16) angstig gevoel				X	
Subtotalen				42	8
Totaal	50				

Identificeer triggers:

Noem 3 situaties waarin deze symptomen vaak voorkomen:

1) Zoon 8 Uitermate zorgen
2) financiën →
3)

Nooit = 0
Zelden = 1
Soms = 2
Vaak = 3
Heel vaak = 4

Afkappunt = 19

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Onderzoek: Herken de symptomen

- frequent diep zuchten
- sterk onregelmatig adempatroon
- snel inademen, hoog in de borst
- mondademhaling
- snel spreken, veel woorden op een uitademing
- weinig spreiding van de onderste ribben
- veelvuldig slikken

(Esser 2015)

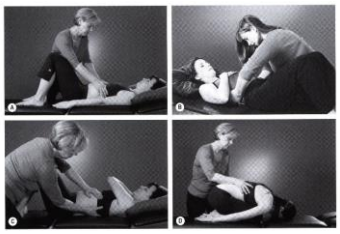
3) Myofasciaal onderzoek

Fascia Functie Onderzoek:

m.n. anteflexie, extensie cwk, extensie wk, lateroflexie wk, rotatie wk, squat

Palpatie:

- Superficiale fascia
- Triggerpoints (buikspieren, intercostaal, scaleni, SCM, trap, serrati, QL, psoas, bekkenbodem)
- Mobiliteit thorax / t.w.k.



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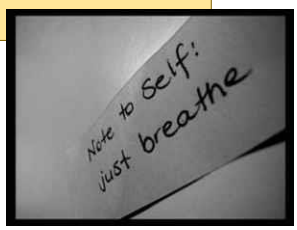
Ademtherapie

1) Adempatroon: bewustwording en educatie
2) Myofasciale behandeling



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Educatie

Educatie

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Verschillende ademmethoden:

- Van Dixhoorn (verandering door ervaring)
- Buteyko (adem verminderen)
- Bridgeman (aandacht voor uitademing)
- Wim Hof (immuunsysteem)
- Yoga

De basis: ‘hersenstamademhaling’

- Rechte, open houding
- Bodyscan
- Adem vanuit de buik
- *‘adem, rustig in, adem rustig uit, neem dan een pauze’*
- *‘adem opnieuw in als je van binnen voelt dat het weer tijd is om te ademen’*
- Bodyscan

Richtlijnen

- Breath slowing (‘traag en laag’)
- Reduced volume breathing
- Effortless
- Regelmaat
- Positieve beelden

Low, Slow & Less

Effect 2x5 min/dag oefenen

	Pre	Post		Sample size 500
		6 weeks	6 months	
I feel tired	53%	34%	29%	Often/Most of the Time
I feel exhausted	39%	22%	18%	Often/Most of the Time
I feel worried	35%	16%	12%	Often/Most of the Time
I feel anxious	33%	15%	12%	Often/Most of the Time
I feel tense	43%	16%	17%	Often/Most of the Time
I feel uneasy	29%	9%	8%	Often/Most of the Time
I feel annoyed	35%	15%	13%	Often/Most of the Time
I feel sleeplessness	50%	29%	30%	Often/Most of the Time
I feel relaxed	45%	55%	61%	Often/Most of the Time
I feel satisfied	52%	61%	65%	Often/Most of the Time
Home/work conflict	55%	47%	44%	Agree/Strongly Agree
I feel like leaving the organisation	31%	29%	23%	Agree/Strongly Agree
I feel clear headed	74%	80%	82%	Often/Most of the Time
I feel focused	71%	76%	80%	Often/Most of the Time
We listen to each other	49%	58%	62%	Agree/Strongly Agree
My work produces excellent results	59%	72%	69%	Agree/Strongly Agree

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Can stress be reduced by using heart coherence?

This research shows that a short period (2 weeks) with little training (4 session of half an hour) and a small amount of homework (5 times a day during half a minute) is sufficient to change the physiological avoidance-state of stress in the direction of 'approach' with positive consequences for the physical, emotional and cognitive 'overall' levels of stress.

Jolant van den Haspel. Master Thesis, Faculty of Behavioral and Social Sciences, Experimental and Work Psychology, University of Groningen, Netherlands, 2009.

Biofeedback

Respirate

EmWave

Stress pilot

37

Behandeling ademhaling

De-activate trigger points

Mobilise the tissues

Low, Slow, Less

Simple!

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Sternale fascia - Tx

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Na de behandeling

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Next week

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Palpatie sternale fascia

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