

## Supplementary Files for manuscript

**Translation and cross-cultural adaptation of the Breathing Vigilance Questionnaire (Breathe-VQ) targeted people with respiratory diseases.**

### Supplementary Files - overview

- 1) Demographic questionnaire used at inclusion (including additional questions on respiratory health and physical activity) (1A: Danish version; 1B: English version (non-validated translation of the Danish version).
- 2) Interview guide (2A: Danish version; 2B: English version (non-validated translation of the Danish version).
- 3) Table 2 – elaborated version.
- 4) Final Danish version of Breathe-VQ.

## Supplementary File 1:

Demographic questionnaire used at inclusion (including additional questions on respiratory health and physical activity, Danish version (1A) and English translated version (1B).

### 1A: Demographic questionnaire used at inclusion (including additional questions on respiratory health and physical activity, Danish version

<i>Confidential</i>		<i>Page 1</i>
<p>Spørgeskema Tak fordi du vil deltage i vores forskningsprojekt, hvor vi oversætter et spørgeskema til vurdering af din oplevelse af din vejtrækning. Det tager ca. 10 minutter at svare på spørgeskemaet. Vi ved, at nogle spørgsmål kan være vanskelige at besvare, men beder dig om at vælge det svar, du synes passer bedst. Samtidig må du gerne være opmærksom på, om nogle af spørgsmålene er svære at forstå eller svare på. Når du har besvaret spørgeskemaet, vil du automatisk modtage en mail, så du kan se dine svar. I starten af spørgeskemaet skal du give samtykke til, at dine oplysninger må bruges i videnskabelig sammenhæng, samt at vi må ringe dig op og tale med dig om din forståelse af de enkelte spørgsmål i spørgeskemaet. Dit samtykke kan til enhver tid trækkes tilbage ved at kontakte os. Din behandler ser ikke dine svar og dine svar har ingen indflydelse på den behandling, du modtager. Alle indsamlede data behandles anonymt. På forhånd tak for hjælpen</p>		
Record ID	_____	
Dato for samtykke	_____	
SAMTYKKE Jeg giver hermed mit samtykke til deltagelse, herunder at Region Sjælland behandler personoplysninger om mig til brug for dette forskningsprojekt.	<input type="radio"/> Ja <input type="radio"/> Nej	
Jeg er orienteret om, at jeg til enhver tid kan trække mit samtykke til behandling af mine personoplysninger tilbage.		
Fornavn og evt mellemnavn	_____	
Efternavn	_____	

Indtast venligst din mailadresse	_____
Indtast venligst din mailadresse igen	_____
Emails er ikke ens. Ret venligst	<input type="radio"/> Ikke ens
Indtast venligst dit telefonnummer	_____
Indtast venligst dit telefonnummer igen	_____
Telefonnumre er ikke ens. Ret venligst	<input type="radio"/> Ikke ens
Telefonnummeret er ikke på otte cifre. Dobbelttjek venligst det indtastede telefonnummer	<input type="radio"/> Ikke ens
Køn	<input type="radio"/> Mand <input type="radio"/> Kvinde <input type="radio"/> Andet
Alder	_____

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Hvilket hospital er du henvist til med dine nuværende vejtrækningsproblemer?

Næstved-Ringsted-Slagelse Sygehuse (Næstved)  
 Næstved-Ringsted-Slagelse Sygehuse (Slagelse)  
 Holbæk Sygehus  
 Sjællands Universitetshospital (Køge)  
 Sjællands Universitetshospital, (Roskilde)  
 Andet

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Hvilken lungesygdom er har du?  
 Det er muligt at angive flere sygdomme.

Astma  
 KOL  
 Lungecancer  
 Dysfunktionel vejtrækning  
 Er igang med at blive undersøgt for mulig lungesygdom  
 Anden  
 Har ingen lungesygdom

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Antal gange set hos fysioterapeut på hospitalet med dine vejtrækningsproblemer

(Angiv svar indenfor 0-5)

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**Spørgeskema om fysisk aktivitet**

**Det følgende spørgsmål handler om, hvor fysisk aktiv du er i din fritid og ved transport (inkl. transport til og fra arbejde/skole/uddannelse).**

Det følgende spørgsmål handler om, hvor fysisk aktiv du er i din fritid og ved transport (inkl. transport til og fra arbejde/skole/uddannelse).

Mindre end ½ time (mindre end 30 minutter)  
 ½ - 1½ time (30-90 minutter)  
 1½ - 2½ time (90 - 150 minutter)  
 2½ - 5 timer (150 - 300 minutter)  
 Mere end 5 timer (mere end 300 minutter)

På en typisk uge, hvor meget tid bruger du i alt på moderat og hård fysisk aktivitet, hvor du kan mærke pulsen, og vejtrækningen øges (det kan f.eks være rask gang, cykling som transport eller motion, tungt havearbejde, løb eller motionsidræt)?

**1B: Demographic questionnaire used at inclusion (including additional questions on respiratory health and physical activity, English translated version (directly translated into English for transparency (i.e., not a validated back-translation)).**

<p>Thank you for taking part in our research project in which we are translating a questionnaire about evaluation of your experience of breathlessness. It takes around 10 minutes to complete the questionnaire. We know that some questions might be difficult to answer but we ask you to choose the reply that you think is the right one. At the same time, we ask you to notice whether you think that some of the questions are difficult to understand or to answer. When you have completed the questionnaire, you will automatically receive an email in which you can see your replies. In the beginning of the questionnaire, you will be asked to provide your consent that your information may be used in a scientific context and that we are permitted to call you and speak to you about your understanding of each question in the questionnaire. At any time, you can withdraw your consent by contacting us. Your replies will not be visible to your healthcare professionals, and your treatment will not be affected by your replies. All collected data will be treated anonymously. In advance: Thank you for your help.</p>	
Record ID	
Date of consent	
Consent: I hereby give my consent to participate, which also includes that Region Zealand handles personal information about me for the purpose of this research project. I am informed that I can withdraw my consent at any time.	<p>Yes</p> <p>No</p>
First and middle name	
Last name	
Please enter your email address	
Please enter your email address once again	
Emails are not matching – please correct	Not matching
Please enter your telephone number	
Please enter your telephone number once again	
Telephone numbers are not matching – please correct	Not matching
The telephone number does not consist of eight figures. Please double-check the telephone number	Not matching

Sex	Male Female Other
Age	
Which hospital are you referred to regarding your present breathing problems	Næstved-Ringsted-Slagelse Hospital (Næstved) Næstved-Ringsted-Slagelse Hospital (Slagelse) Holbæk Sygehus Zealand University Hospital (Køge) Zealand University Hospital (Roskilde) Other
Which lung disease do you have?  It is possible to choose multiple diseases.	Asthma COPD Lung cancer Dysfunctional breathing Under workup for other potential lung disease Other Do not have a lung disease
Number of times you have seen a physiotherapist at the hospital regarding your breathing problems	Number from 0-5

The next question is about how physically active you are in your leisure time and in connection with transportation (including transportation to and from work/school/education).	Less than ½ hour (less than 30 minutes) ½ - 1½ hour (30-90 minutes) 1½ - 2½ hours (90 - 150 minutes) 2½ - 5 hours (150 - 300 minutes) More than 5 hours (more than 300 minutes)
During a typical week, how much time do you spend in total on moderate to hard physical activity where you can feel your pulse and where the breathing becomes heavy (for example during brisk walk, bicycling as transportation or as exercise, heavy garden work, running, or exercise)?	Less than ½ hour (less than 30 minutes) ½ - 1½ hour (30-90 minutes) 1½ - 2½ hours (90 - 150 minutes) 2½ - 5 hours (150 - 300 minutes) More than 5 hours (more than 300 minutes)

## Supplementary File 2

### Interview guide in Danish (2A) and English (2B)

#### 2A: Interview guide – Danish version

(English version below)

Item	Interview guide
<b>Procedure</b>	Deltagerne bliver bedt om at have deres besvarelse åbnet (se den email, du modtager). Dvs mulighed for at se egen besvarelse og spørgsmålsformuleringen. Alternativt: Vi sender pdf af skema forinden. Deltager skal sidde med ved skærm alternativt printet
<b>Intro</b>	Tak for din tid og for din deltagelse i vores forskningsprojekt. Jeg har nogle spørgsmål om Breathe-VQ. Det vil tage ca 10 minutter. Jeg laver noter om dine svar, dvs der er ingen lydoptagelse, mens vi taler sammen. Vi ønsker at vide om de enkelte spørgsmål i Breathe-VQ er forståelige, og om du synes, at svarmulighederne er forståelige og relevante.
<b>Overordnet</b>	Hvordan var din oplevelse af at besvare dette spørgeskema? Hvad var let at besvare? Oplevede du noget, som var svært? Var der udsagn, hvor du havde besvær med at forstå, hvad der var ment? Var der ord undervejs, som du umiddelbart ville have erstattet, hvis du skulle formulere udsagnene?
<b>Title</b>	Kommentarer?
<b>Answer options for all questions</b>	Kommentarer?
<b>Instructions</b>	<b><i>Fokus: Ordet 'normalt' (anden mulighed 'for det meste') /hvordan du plejer at have det</i></b>  Hvordan opfatter du ordet 'normalt'? Hvad ville dit forslag til et andet ord end "normalt" være? Andre kommentarer?
<b>Q1</b>	<b><i>Fokus: ordene 'meget opmærksom', er det godt dansk? (Desuden Tidsfaktoren)</i></b>  Er du i tvivl om spørgsmålet? Hvis ja: vil du forstå det bedre med 'registrerer nøje' eller 'følger tæt'? Andre kommentarer?
<b>Q2</b>	<b><i>Fokus: 'alarmberedskab'</i></b>  Forstår du begrebet alarm-beredskab? Findes et bedre ord? ('alarmeret')

	Andre kommentarer?
<b>Q3</b>	Kommentarer?
<b>Q4</b>	<b><i>Fokus: forståelse af 'end de andre' (ment som "end andre er af deres vejtrækning")</i></b>  Er noget uklart i dette udsagn? Mangler en præcisering? Hvad forstår du ved 'end andre er'? Andre kommentarer?
<b>Q5</b>	<b><i>Fokus: 'føler trang til': evt erstatte det med 'over-opmærksomhed'</i></b>  Hvad forstår du ved spørgsmålet? Har du et alternativ til formulering, som vil gøre det lettere at forstå? Andre kommentarer?
<b>Q6</b>	<b><i>Fokus: tidsperspektiv? 'Ændringer' i stedet for 'udsving'?</i></b>  (Hvilket tidsperspektiv tænkte du på ved besvarelsen?) fra 3. interview undlades denne del. Forstået som f.eks. 'det sker lige nu', eller 'det kunne komme til at ske'. Andre kommentarer?

**2B: Interview guide – English version (“direct” translation of the Danish version, i.e., not validated or tested)**

<b>Item</b>	<b>Interview guide</b>
<b>Procedure</b>	Participants are advised to have their completed survey answers present (instruction: please see the email you have received). This gives the possibility of seeing one's own survey answers along with the wording of each question. Alternatively: We will email a pdf of the survey answers before the interview. The participant must have his/her screen (or a printed version) in front of him/her during the interview.
<b>Intro</b>	Thank you for your time and for participating in our research project. I have some questions about the Breathe-VQ questionnaire. In total, the interview will last for about 10 minutes. I will make written notes about your replies, and, thus, there is no recording of our conversation. We wish to investigate whether the questions in the Breathe-VQ questionnaire are easy to understand and whether you think that the possible answers are easy to understand and whether they are relevant.
<b>Overall</b>	Describe your experience from completing the questionnaire.
	Which parts were easy to complete? Did you find that some parts were difficult to complete?
	Did you experience any specific wordings or phrasings where it was difficult to comprehend what was meant?

	Did you experience any specific wordings or phrasings where you would have suggested a different wording or phrasing?
<b>Title</b>	Comments?
<b>Answer options for all questions</b>	Comments?
<b>Instructions</b>	<p><b>Focus: The word “normally” (other possibilities: “mostly” / “how you usually feel”</b></p> <p>How do you perceive the word “normally”? Which other suggestions do you have as replacement of the word “normally”? Other comments?</p>
<b>Q1</b>	<p><b>Focus 1: The words “highly aware”, is that understandable in Danish?</b> <b>Focus 2: The time factor.</b></p> <p>Did you think that there was anything unclear regarding this question? If yes: Would it be clearer if formulated as “register closely” or “follow closely”? Other comments?</p>
<b>Q2</b>	<p><b>Focus: “Alarmed”</b></p> <p>Do you understand the word “alarmed”? Would there be a better alternative to “alarmed”? Other comments?</p>
<b>Q3</b>	Comments?
<b>Q4</b>	<p><b>Focus: Understanding of “than others” (meaning: “than others are about their own breathing” or “than others are about my breathing”)</b></p> <p>Did you think that there was anything unclear regarding this question? Does it need to be more precise? How do you perceived the wording “than others are”? Other comments?</p>
<b>Q5</b>	<p><b>Focus: “feel an urge to”: Perhaps replace with “hyper-occupied”</b></p> <p>How do you perceive the question? Do you have an alternative suggestion for a wording to make the question easier to understand? Other comments?</p>
<b>Q6</b>	<p><b>Focus 1: Time factor?</b> <b>Focus 2 “Changes” instead of “fluctuations”?</b></p> <p>How did you perceive the time perspective in this question? (from 3<sup>rd</sup> interview round, this point is not included) (meaning: “happening right now” or “it might happen”). Other comments?</p>

## Supplementary File 3

### Overview of translation and adaptations across six stages, elaborated version.

	Original version	Comments and adjustments Step 1-4	Comments and adjustments Step 5	Final Danish version*
<b>Title</b>	Breathing Vigilance Questionnaire	<p><i>Comments:</i> Discussion of “vigilance” versus “awareness”.</p> <p><i>Adjustments:</i> Usage the most neutral word for “vigilance” in Danish.</p>	<p><i>Comments:</i> None.</p> <p><i>Adjustments:</i> None.</p>	Questionnaire about breathing vigilance (Breathing Vigilance Questionnaire)
<b>Instruction</b>	Please read the sentences below and choose a number between 1 (never) and 5 (always) that best describes how you typically feel in relation to your breathing.	<p><i>Comments:</i> Discussion of “normally” versus “most often” and the underlying time perspective.</p> <p>Decision to ask participants how they understood “normally”.</p> <p><i>Adjustments:</i> Usage “most often”.</p>	<p><i>Comments:</i> “Normally” well understood. Participants wanted information on length of questionnaire to level the extend of reflection in each response.</p> <p><i>Adjustments:</i> None, but addition “In the six sentences...”.</p>	In the six sentences below, please choose a number between 1 (never) and 5 (always) to best describe how you most often feel about your breathing.
<b>Score</b>	Ranging from 1 to 5 (1=Never, 3=Sometimes, 5=Always).	<p><i>Comments:</i> Considerations concerning three written options within five items.</p> <p>Decision to reduce to two written options to match the instruction (see above) and ask participants how</p>	<p><i>Comments:</i> Instruction well understood.</p> <p><i>Adjustments:</i> None.</p>	Reply options for all questions on a scale ranging from 1 to 5 (1=Never, 5=Always).

		<p>they understood the instruction and response options.</p> <p><i>Adjustments:</i> None, but included in introduction: “Reply options for all questions on a scale ranging from 1 to 5 (1=Never, 5=Always)”.</p>		
<b>Item 1</b>	I closely monitor how difficult my breathing feels.	<p><i>Comments:</i> Discussion of “monitor” and alternatives: “register”, follow closely”, “aware about”.</p> <p>Discussion of whether grading should be based on the scoring or included in the wording of the question, e.g., “very”.</p> <p>Discussion of time factor.</p> <p>Decision to propose the alternatives and, furthermore, to ask participants how they understood the time factor.</p> <p><i>Adjustments:</i> “I am very aware about how difficult my breathing feels”.</p>	<p><i>Comments 1:</i> In round one, item was well understood. One participant preferred precision regarding time. One suggested to remove “very”.</p> <p>Decision of removal of “very” as grading is included in scores.</p> <p><i>Adjustments 1:</i> “I closely register how difficult my breathing feels”.</p> <p><i>Comments 2:</i> In round two, the interviewed focused on “closely register”. Alternatives were suggested “closely follow”. Different expression for “closely” were suggested, but the interview showed that one of them</p>	I closely follow how difficult my breathing feels.

			<p>was not understood by younger individuals, which we therefore rejected.</p> <p>Decision to ask participants to explain how they understood the question.</p> <p><i>Adjustments 2:</i> “I closely follow how difficult my breathing feels”.</p> <p><i>Comments 3:</i> A minor addition (not reflected in English version) included regarding “follow”, to emphasize the meaning of the item in Danish and to improve comprehensibility in Danish language.</p> <p><i>Adjustments 3:</i> Minor addition.</p>	
<b>Item 2</b>	I become alarmed when I experience breathlessness or tightness in my chest.	<p><i>Comments:</i> Discussion of “alarmed” versus alternatives as “distressed” and the weaker “concerned” or “worried”.</p> <p>Discussion of “tightness”, which was not well understood by the</p>	<p><i>Comments 1:</i> In round one, item was well understood. Alternatives suggested for state of “alert”: “anxious”, “terrified”, “alarmed”, “worried”, “afraid”, “nervous”, “state of alert”, however</p>	I become afraid when I experience breathlessness or tightness around my chest.

		<p>linguistic, however an often-used expression by the patients in the clinicians' perspective.</p> <p><i>Adjustments:</i>          "I get in a state of alert when I experience breathlessness or when I experience tightening around my chest."</p>	<p>understood as related to e.g., fire. "Panic" suggested but too fierce.</p> <p>Decision on "become afraid" as it is the most objective word. Further: to ask participants to explain how they understood the question.</p> <p><i>Adjustments 1:</i>          "I become afraid when I experience breathlessness or when I experience tightness around my chest".</p> <p><i>Comments 2:</i>          In round two, the item was well understood, however, one participant perceived two questions in the item. Invites for reflection for the responders.</p> <p>Discussion of "chest tightness" with the developers, how to distinguish from cardiac-related. Decision: Fidelity to the original version but in a less complex wording.</p>	
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			<p><i>Adjustments 2:</i> “I become afraid when I experience breathlessness or tightness around my chest.”</p>	
<b>Item 3</b>	I am highly aware of small changes in how my breathing feels.	<p><i>Comments:</i> Discussion of “aware”, versus the alternative “conscious”.</p> <p>Discussion of whether grading should be based on the scoring or included in the wording of the question, e.g., “very”.</p> <p>Discussion of “breathing”, due to several alternatives in Danish language.</p> <p>Decision to test the current version and to propose an alternative version to get the participant’ input</p> <p><i>Adjustments:</i> “I am very aware about small changes in how my breathing feels.” Alternative suggestion: “I register the small changes in how my breathing feels.”</p>	<p><i>Comments:</i> In round one, item was well understood. One participant commented she was constantly aware; it was more about sensing changes.</p> <p><i>Adjustment 1:</i> To avoid implicit grading, removal of “very”. Instead including “even”.</p> <p>“I am aware about even the small changes in how my breathing feels”.</p> <p><i>Comments 2:</i> In round one, item was well understood. One participant noted that the wording made her reflect. Participants noted that items 1 and 3 were similar.</p> <p><i>Adjustments 2:</i> None.</p>	I am aware about even the small changes in how my breathing feels.

<p><b>Item 4</b></p>	<p>I feel as if I am more aware of my breathing than other people.</p>	<p><i>Comments:</i> Discussion of the distinction between others being aware of <i>their</i> breathing versus being aware of <i>my</i> breathing.</p> <p><i>Adjustments:</i> To specify, we included “than others are” in the end:</p> <p>“I feel that I am more aware of my breathing than others are”.</p>	<p><i>Comments:</i> In round one, item was well understood.</p> <p>In round two, one participant noted that the item made her reflect.</p> <p>In round two and three, participants commented on difficulties in knowing how other individuals experience feel their own breathing.</p> <p>In Danish, it would be correct to include “... than others are regarding their breathing”, but we agreed to go with the current version, closest to the original, English version.</p> <p><i>Adjustments:</i> None.</p>	<p>I feel that I am more aware of my breathing than others are.</p>
<p><b>Item 5</b></p>	<p>When something happens that affects my breathing, I am anxious to work out how breathless I am.</p>	<p><i>Comments:</i> Discussion of "anxious to" versus "feel an urge to"</p> <p>Discussion of time factor.</p> <p><i>Adjustments:</i> “When something happens that affect my breathing, I feel</p>	<p><i>Comments 1:</i> During the interview rounds, participants mentioned that they were more occupied finding out <i>why</i> they would feel breathless, than <i>the extent</i> of breathlessness.</p>	<p>When something happens that affect my breathing, I become occupied with finding out the degree of breathlessness I get.</p>

		<p>an urge to find out how much dyspnoea I actually experience.”</p>	<p>In round one, two suggested “I feel a need to work out...” or “I become occupied with working out...”.</p> <p><i>Adjustments 1:</i> As the question was well understood, we agreed to delete “actually experience” and to change to “become occupied” to simplify.</p> <p>Decision to ask participants to explain how they understood the question, and to suggest less complex wording.</p> <p>“When something happens that affect my breathing, I become occupied with finding out how much breathlessness I get.”</p> <p><i>Comments 2:</i> In round three and four, participants noted the wording made them reflect. Furthermore, that the item was spot-on-relevant to their sensations.</p> <p><i>Adjustments 2:</i></p>	
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			None.	
<b>Item 6</b>	I worry about fluctuations in my breathing.	<p><i>Comments:</i> Discussion of time factor.</p> <p>Discussion of “worry” versus “anxious”.</p> <p>Discussion of “fluctuations” versus “changes”.</p> <p>Discussion whether to include “even small”, to indicate the ongoing awareness of the breathing.</p> <p>Decision to ask participants how they understood these words.</p> <p><i>Adjustments:</i> “I worry about fluctuations in my breathing”.</p>	<p><i>Comments 1:</i> In round two, participants understood “fluctuations” however two preferred “changes”. “Worry” was well-understood but two pointed out that beside worry they experience anxiety, irritation, and frustration.</p> <p><i>Adjustments 1:</i> ”When I experience fluctuations in my breathing, I become worried.”</p> <p><i>Comments 2:</i> Awareness in the study group that the proposed version was too diverse to the original version, and a shorter version then proposed.</p> <p>Decision to ask participants to explain how they understood the question.</p> <p><i>Adjustments 2:</i> “I worry about fluctuations in my breathing.”</p> <p><i>Comments 3:</i></p>	I worry about fluctuations in my breathing.

			In round three, the item was well-understood.  <i>Adjustments 3:</i> None.	
<b>Score</b>	NB: Item scores are summed to yield a total score ranging from 6 to 30 points, with higher scores suggesting greater breathing vigilance.	<i>Comments:</i> Discussion of “different” versus “varies”. Discussion of “vigilance” versus “awareness”.  <i>Adjustments:</i> Equivalent to the discussion and final wording of the title.	<i>Comments:</i> This instruction was not tested in participants.  <i>Adjustments:</i> None.	Note: Add the scores from the various replies in a total score ranging from 6 to 30 points. The higher score, the higher degree of breathing vigilance.

\*The Danish version in the outer right column is directly translated into English for transparency (i.e., not a validated back-translation).

## Supplementary File 4

### Final Danish version of Breathing Vigilance Questionnaire.

<b>Spørgeskema om opmærksomhed på vejtrækning (Breathing Vigilance Questionnaire)</b>						
I de seks sætninger neden for bedes du vælge det tal mellem 1 (aldrig) og 5 (altid), som bedst beskriver, hvordan du for det meste har det med din vejtrækning.						
		1 (aldrig)	2	3	4	5 (altid)
1	Jeg følger tæt med i, hvor besværet min vejtrækning føles.					
2	Jeg bliver bange, når jeg oplever åndenød eller stramhed om brystkassen.					
3	Jeg er bevidst om selv de mindste ændringer i, hvordan min vejtrækning føles.					
4	Jeg føler, jeg er mere bevidst om min vejtrækning, end andre er.					
5	Når der sker noget, der påvirker min vejtrækning, er jeg optaget af, hvor meget åndenød jeg får.					
6	Jeg bekymrer mig om udsving i min vejtrækning.					
	Total score:					
OBS: Scoren fra de forskellige udsagn lægges sammen til en total score fra 6 til 30 point. Jo højere score, des større opmærksomhed er der på vejtrækningen.						

Translated from original Breathing Vigilance Questionnaire (Steinmann J, Lewis A, Ellmers TJ, et al. Validating the Breathing Vigilance Questionnaire for use in dysfunctional breathing. Eur Respir J. 2023;61:2300031. doi: 10.1183/13993003.00031-2023) with permission from the developers Adam Lewis and Elmar Kal.