Buteyko Case Studies

Case study 1: Peter*

Session 1†

Peter, 51, a librarian, was diagnosed with late-onset asthma 10 years ago, and consulted in the hope of improving his asthma control. His original diagnosis followed hospitalisation in 1998 for a 'heart attack' that turned out to be an asthma-cum-panic attack. This was at a time of emotional turmoil, and he believes this was the trigger. At the time he was prescribed drugs, but refused to take them.

Factors that can bring on an attack include rushing, as well as events like moving house, and stress generally. He is also very susceptible to respiratory tract infections, and prior to 2000 had endless colds, and flu at least twice a year, all of which increased his chances of an attack. He is sensitive to dust and pollen, and suffers from hayfever for 2½ months in the summer, when again his chances of asthma are increased. Finally, wheezing can be brought on by dampness, humidity and storms.

In order to reduce the impact of some of these factors, he has done a lot of work on relaxation (meditation, etc); this was even more essential since, until his mentally ill mother died 18 months ago, he was the main person responsible for caring for her. Since 2000 he has also been consulting a herbalist to try to improve his respiratory health, and feels this has helped enormously. He hopes that Buteyko will bring additional benefits, and reduce the likelihood of his having to take asthma drugs.

He claims not to take any formal exercise, but nonetheless walks for about one hour per day.

Peter is not taking any conventional medicines for asthma.

On examination his BP was 131/83, his pulse 70, and his Control Pause (CP) 12 seconds.

In the first session I went over the basic ideas and techniques of Buteyko: the paramount importance of nasal breathing and avoidance of hyperventilation; the 15-minute nose-breathing walk; taping for one hour per day; the sequence of pulse, CP, and Relaxed Breathing; and filling in the Practice Diary. Peter appeared to have a very intellectual approach to Buteyko, and wanted to discuss the theory at length – which I was only too happy to do.

Session 2

Since the last time Peter's compliance has been frankly poor: he has only managed to do the exercise sequence 4 or 5 times. He has not taped at all. He felt that it was very easy to slip into breathing through his mouth, and that he was still at the 'reflex stage'. He also found that breathing through the nose was 'hard work on the lungs';

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* All names have been changed to maintain confidentiality.

†Unless otherwise mentioned, sessions are one week apart.

and though he was now more conscious of the fact that he was hyperventilating, he felt uncomfortable trying to stop this. I explained that after a lifetime of hyperventilation, changing one's pattern of breathing was bound to feel unnatural at first. I also stressed that to derive any benefit from Buteyko it was essential to *do* the exercises on a regular basis, rather than just thinking about them.

In the exercises he had recorded in the Practice Diary, Peter's CP ranged from 20 to 40, which made me think that he was forcing it; I explained again that the CP was simply *a measurement* technique. Apparently he had a tendency to fall asleep when doing the exercises, which at least suggests that he was appropriately relaxed!

During this session we covered the Extended Pause (EP) and Reduced Breathing: Peter achieved a CP of 22 and an EP of 30 seconds. There was still some upper chest movement, so I suggested ways of remedying this (sitting on hands, etc). He promised to try taping in the coming week.

Overall Peter found my theoretical explanations as to how Buteyko might work (including controversy over CO_2 , etc) very helpful. The whole venture was 'a challenge' to him.

Session 3

This week Peter's practice had been more consistent – twice a day. From the Diary his CP was 17-24 and his EP 29-33. He found the pause in Reduced Breathing 'comforting', and felt there was something reassuring and centring in forcing oneself to do this – one was obliged to be 'in the moment'. He also found the paradox of 'breathing less to breathe more' strange and counterintuitive, but was also fascinated by it. He had continued to practise walking with his mouth closed, but had to resist the 'reflex of yawning'.

In this session Peter learned Slow Breathing and the Maximum Pause, with distraction techniques: in two sequences his pauses were:

CP 20 $\rightarrow$ EP 24 $\rightarrow$ MP 31
CP 17 $\rightarrow$ EP 24 $\rightarrow$ MP 33

I also taught him the Quick Fix.

By now Peter had become comfortable with taping, and agreed to try taping at night.

Session 4

Peter liked Slow Breathing better than Reduced Breathing, finding it more in tune with his own rhythm. He had also taped regularly at night, and managed to keep the tape on until morning. On most days he had done the 15-minute walk. Overall he found the sessions had a relaxing effect: his pulse had dropped from 68/70 initially to 62/64 – i.e. an average drop of 6 bpm. His average recorded pauses were CP 20-22, EP 26-28, MP 33.

Peter found the Very Reduced Breathing that we covered in this session 'very unnatural and challenging'. We discussed (as we had already done before) the idea of the BBT as a desensitisation technique, and also the concept of 'resetting'. In the

session his pauses were: CP 19, EP 28, MP 34, which was consistent with what he had been achieving during the week.

Finally we talked about ways of incorporating Buteyko into daily activities while winding down the exercises.

Session 5

There was a longish gap before this session, but Peter had continued with the exercises. He had found the Very Reduced Breathing 'very difficult', but overall the exercises were very effective at relaxing him. He believed he was much more aware of nose breathing and better at doing it. His average pauses, as recorded in the Diary, were: CP 20-24, EP 28-30, MP 44-46. During the session the figures were: CP 21, EP 26, MP 39. Though I hoped that his CP would be rather higher by this time, he was in fact astonished and pleased that he had achieved a CP that was almost double his original of 12. He felt that the technique had been of enormous benefit, though he was initially sceptical.

Finally I taught him the exercise sequence combining movement and breathing, and suggested stepping up the exercises again if either his CP fell or he developed a respiratory infection.

Case study 2: Jennifer

Session 1

Jennifer, 51, is a journalist who developed asthma at age 5 or 6, following a bout of whooping cough. As a child she was highly allergic – particularly to cats, dogs, and dust – and her parents' smoking exacerbated her asthma. She considers that Intal (sodium cromoglicate) radically changed her life.

She often suffers from coughing fits: any 'big emotion' leads to her throat closing, and a fit of coughing ensues. Other triggers are anxiety and stress (+++), stormy weather, and dirt (when cleaning). Ameliorating factors are yoga and meditation (+++), hot dry weather, and swimming: in fact she claims she can swim a whole length underwater while holding her breath.

Jennifer is susceptible to respiratory infections, which also heighten the chances of an asthma attack; two years ago she was ill 6-7 times during the year, but last winter, after consulting a herbalist, she was only sick once. She has also had panic attacks when she couldn't breathe (for example, in the theatre), but managed to calm these with yoga breathing. In addition, Jennifer has had treatment for depression.

She has now reached the point where allergies are no longer a problem: she rarely suffers from hayfever (although she gets sensitive eyes), and she is able to own cats.

At present Jennifer feels she is very unfit and overweight (11 st 10 lb), as she has sprained her foot badly and can't go to the gym.

Over the years she has been prescribed numerous drugs, including steroid tablets. Her present drug regime is: Seretide (125 or 250?), 2 puffs bid, with Ventolin for occasional backup.

On examination her BP was 153/80, pulse 68, bpm 12, and CP 16. I told her that her BP seemed high, and made a note to recheck it before using any Extended Pauses.

Although Jennifer has done yoga training and is aware of diaphragmatic breathing, it was clear from the outset that there was a lot of upper chest movement during the breathing exercises. She also admitted to being a lifelong mouth-breather. We discussed at length the importance of nasal breathing, and how this would reduce the likelihood of panic attacks as well as asthma. I taught the basic techniques for session 1, and she undertook to fill in the Practice Diary for next week.

Session 2

There has been a 3-month gap since the last session: Jennifer has been busy with work and travel, and has also missed two appointments. Essentially she has done almost nothing – just 'informal' practice. I emphasised that unless she practised the exercises on a regular basis, no progress would be made. However, she has now broken her toe as a result of osteopaenia, and feels that this decrease in bone mass may be related to taking inhaled steroids for 25 years; this discovery, she says, has given her fresh impetus to persevere with the BBT.

We repeated the basic sequence of pulse, CP and Relaxed Breathing; her upper chest was heaving, and I got her to place her hands so she could feel this, and also to breathe with hands behind head to reduce the activity of her auxiliary respiratory muscles. Her results for this sequence were:

pulse 62 $\rightarrow$ CP 23 $\rightarrow$ CP 29 $\rightarrow$ CP 33 $\rightarrow$ pulse 62 $\rightarrow$ final CP 30

Although this looks impressive, Jennifer was obviously overdoing it, as her breath was not well controlled after the CP; I also explained that she should not take a deep breath *before* the CP, since this would extend the CP unnaturally.

I taught her the mini-pauses to counter breathlessness.

To help reduce mouth breathing, she undertook to tape for 1 hour per day; she cannot do the daily walk because of her toe, but said that instead she would try doing her gym exercises with her mouth closed. She is also to speak to her GP about changing Seretide for Ventolin + an inhaled steroid.

Postscript: Owing to pressure of work Jennifer cancelled the next appointment several times, and has not returned for BBT training.

Case study 3: Elise

Session 1

Elise, 61, is an administrator whose asthma began in the last 10 to 20 years. She is usually mildly asthmatic, but last December her asthma became really severe, with

coughing and difficulty breathing. She was then prescribed oral steroids, which she took for only one week, but they improved her condition enormously.

Exacerbating factors include running, which results in coughing that can provoke an attack, and respiratory infections, which have a similar effect. After climbing the stairs to her office, she usually arrives coughing and wheezing. Elise is also allergic to pollen, and suffers from hayfever in early summer. She has little time for exercise at present, though formerly she did yoga, pilates, and regular gym workouts.

Elise was diagnosed 18 years ago with hypothyroidism, which is controlled by thyroxin.

She is very attentive to diet, and has a healthy regime that includes a lot of fruit, nuts, seeds, salad and vegetables, as well as pulses, chicken, and grains such as oats, quinoa, millet and spelt, with ample water. I suggested that she introduce fatty fish such as mackerel and salmon to increase her omega-3 fatty acid levels.

Her present drug regime is:

- Becotide 100: once daily
- Ventolin: on average twice weekly (though used more frequently in hayfever season, in traffic, and if she has a cold)
- Thyroxin: 75 µg daily.

Elise had heard about Buteyko, and hoped that this would be a way of reducing both her symptoms and her dependence on drugs.

As Elise is not using a compound LABA/steroid preparation, reduction in Ventolin use, as well as symptom improvement, should provide a simple way of monitoring progress.

On examination, her BP was 135/70, pulse 87, bpm 16, and CP 10.

Elise said that she was aware that she breathes through her mouth, and we discussed the importance of avoiding hyperventilation by breathing through the nose, and the general concept of 'breathing less', as well as ways to achieve this (taping, etc). She learned the basic sequence – pulse, CP, Relaxed Breathing – and it was clear that her breathing was mostly into the upper chest, with very little abdominal movement. I showed her ways of promoting diaphragmatic breathing: relaxing the muscles of the shoulders, chest and neck, sitting on the hands, or doing exercises such as Sitting/Lying in the Beach.

Session 2

Elise postponed the second appointment for one week, as she had found it difficult to keep to the routine, especially during lunchtime in the office. She had only started the exercises in the second week, and even then had missed two full days in the middle of the week; however by the end of the week her CP, though variable, had several times reached 20 – up from 15/16 a few days before. She had often fallen asleep with the tape on. She was unable to walk much because she had injured her foot. However, since beginning the exercises she had not felt asthmatic at all, and

had not used Ventolin; she was controlling her breathing, not rushing, and not coughing.

We went through Reduced Breathing and the EP: she achieved a CP of 14 and EP of 18. I also taught her the Stop-Cough, as coughing was a particular issue with her.

Session 3

During the past week Elise has had no coughing or wheezing, and has not needed her Ventolin, although she said that with the present damp weather she usually has to use a reliever. She had taped every day. However, by the end of the week her final CP had dropped to 12; against some of these low figures she had written comments, such as 'difficulty in relaxing' and 'felt my body racing'. Her recorded EP was usually no more than 2 seconds longer than her CP; it turned out she had been timing herself by listening to the clock ticking. I strongly recommended that she use a stopwatch so she could concentrate on the exercise rather than the time.

I taught Slow Breathing and the Maximum Pause (MP), with distraction techniques. With the Slow Breathing she experienced some air hunger, and I reassured her that this was normal. She achieved an MP of 25 seconds.

Session 4

This week there was a considerable improvement in the final CP, which varied between 17 and 20 – this was in spite of a slight head cold. She found that she got better results sitting in the half-lotus position, since this facilitated diaphragmatic breathing. During Slow Breathing she had already extended the pause to 3 or 4 seconds. Taping at night was unsuccessful, since she often needs to drink water, and the tape disturbed her sleep.

Again she had not needed the Ventolin, and she said she had also not taken any Becotide: I warned her about the dangers of reducing her steroid intake too abruptly. She found 'relaxing' the Very Reduced Breathing that I taught during the session – I suggested that she gradually extend the pause, and 'relax into it'. Elise felt that she was incorporating the Buteyko into her daily life: when she is rushing, or going upstairs, she feels confident that she is able to control her breath.

Session 5

A good week – Elise's final CP had edged up to 22 (lowest 18). She had used no Ventolin. She reported that yesterday she went with her friends on an energetic uphill walk, and while previously she would have been gasping, now she managed it with her mouth closed; also, she was less tired afterwards than she would have been previously.

In the session her CP was only 16, with an MP of 28, but these figures obviously belie the clear progress she has made in terms of symptom and reliever reduction. I taught her the exercises coordinating movement and breathing, which she found helpful. Her aim is to reach a CP of 30 seconds, and I suggested that she continue the breathing exercises until she achieved this.

Case study 4: Mary

Session 1

Mary, 55, a university manager, suffers with late-onset asthma which began 10 years ago when she awoke coughing in the middle of the night. This situation went on for two years before she was diagnosed with asthma. She was prescribed Ventolin, and then, two years later, Seretide, which she still takes. This Christmas, as a result of an infection, her asthma worsened, and she increased the dose of Seretide: according to her she was close to being prescribed oral steroids.

She is not sensitive to airborne allergens. Triggers, apart from respiratory infections, include hot close weather (particularly in the city), black pepper, and sherbet (!).

Mary has a number of health problems, including type 2 diabetes and mild hypertension, and has also suffered from clinical depression. She is clearly overweight.

She smokes 20 cigarettes a day – though she realises that this is highly detrimental to her health, respiratory or otherwise, and has given up in the past. She is divorced and lives with her grandson, and has a diet that is far too high in takeaways, high-glycaemic-index carbohydrates and trans-fatty acids (biscuits and cakes), and too low in omega-3 fatty acids and vegetables, particularly for a diabetic.

Her present drug regime for asthma (apart from a number of medicines for diabetes and hypertension), is:

- Seretide: 2 puffs bid (more in case of infection)
- Ventolin: 2 puffs bid + as needed (uses frequently if weather is close and humid).

Her main aim is reduce the large number of drugs she is taking while maintaining asthma control.

On examination, her BP was 140/80, her pulse 96, and her CP 13.

In the first session I taught her how to take her pulse and CP, and to practise Relaxed Breathing. She seemed to grasp the principle of abdominal breathing quite quickly, though her breaths were on the large side. We discussed the importance of nose breathing, and ways of heightening one's awareness of this, such as taping for one hour and walking daily for 15 minutes with the mouth closed. Finally, I suggested that she only use Ventolin if necessary, not as a matter of course.

Session 2

Mary reported that she had been 'practising breathing all the time' , i.e. making it part of her daily life. She had been taping for one hour every day, and also doing a nose-breathing walk at least once, sometimes twice, a day; she said that during this time she would normally smoke, and walking helped her not to. She looked remarkably straight and relaxed compared to the previous week. She had carried out the exercise sequence at least twice a day, and had sometimes achieved a CP of 20. Her pulse rate was naturally quite fast, but always dropped after the exercises, which she found very relaxing. She had had some wheeziness, but no coughing, and had

not needed the Ventolin at all. This represented, she thought, a big improvement in a very short time.

Mary learned the Extended Pause and Reduced Breathing: the latter presented no problems, as she said she had already been pausing slightly after the out-breath. Though her diaphragmatic breathing is quite good, her breathing takes some time to settle, and on this occasion she only achieved an EP of 18. I taught her the Quick Fix, Stop-Cough and mini-pauses, and she agreed to try taping at night.

Session 3

This week Mary had made good progress: during the exercise sequence her recorded pulse had sometimes fallen from 92 to 72, her CP had reached 25-30 (with an average in the low 20s), and her EP 33. She had taped for at least two nights, and had used the Stop-Cough successfully to control tickly coughs.

I avoided the Maximum Pause because of her hypertension, but taught her Slow Breathing; she found the pause after the out-breath 'comforting'. Since she was still breathing partly with the upper chest, we spent some time on ways to improve her breathing: using one's hands to feel the movement, and putting the hands behind the head, in both the sitting and supine position. I also suggested that she take smaller breaths. This helped to improve her diaphragmatic breathing.

We also discussed ways to improve her diet: cutting out biscuits and cakes, favouring low-GI grains such as oatmeal, increasing consumption of vegetables, and introducing fatty fish and nuts (e.g. walnuts), as well as eating breakfast, which hitherto she had neglected to do.

Session 4

In the past week Mary had only managed to do the exercises on four of the seven days. She had noticed the difference: more coughing and poorer sleep (she had noticed that her sleep had improved with BBT). She felt that the fall in her EP in the last couple of days was due to the lack of practice, as well as to a slight head cold (I pointed out that, if one had a cold, it was even more essential to maintain the practice). However, she had done the nose-breathing walk and one hour's taping every day, and (for the third week running) had not needed Ventolin.

In this session I explained Very Reduced Breathing, and we ran through a sequence. She found this kind of breathing very difficult, and felt slightly panicky owing to air hunger; she would take two breaths in succession after a long pause, so I suggested that she not push the pause too far. I also reassured her that her response was normal, and that the feeling of panic would dissipate once she had learned to 'relax into the pause'.

I also proposed that, now she could largely manage without Ventolin, she make an appointment with her GP to ask her to exchange her combination LABA/steroid medication for an inhaled steroid.

Session 5

There seemed to have been a falling off since session 3, as Mary's recorded pauses were shorter than they were then, with a maximum EP of only 22. During the session she achieved a CP of only 18, and an EP that was only fractionally longer. However, she said she felt well, had more energy, had not used Ventolin, and all her colleagues had remarked on how she no longer had a coughing fit after climbing the stairs to her office. Also, she is teaching nose breathing to her 90-year-old mother, who is also asthmatic! As with Elise in case study 3 (whose friend she is), this is a case in which the CP figures do not reflect the symptomatic improvement.

Like Elise, Mary also aims to achieve a CP of 30, and I encouraged her to continue the exercises towards this end. We finished with some physical exercises coordinating movement and breathing.

Telephone conversation (3 months later)

Mary feels she has fully integrated Buteyko in her daily life, and believes it has made a major difference. She has not used Ventolin at all. Also, some time after our last meeting, she ran out of Seretide and it took her two weeks to get a new prescription. To her surprise, she felt largely unaffected (only very slightly wheezy). On the strength of this, she cut the dose of Seretide to 1 puff in the evening, with no ill effects over about two months. I reminded her that the effects of steroids were cumulative, and about that she should see her GP to change her prescription, but don't know if she will do this. She has also not stopped smoking. However, it is clear that, even though she is only partially compliant, Mary has derived considerable benefit from BBT. For whatever reason (dietary or otherwise), she has also achieved, with no change in medication, a significant fall in her long-term blood sugar count.

Case study 5: Christina

Session 1

Christina, 51, is an IT advisor who has suffered breathlessness and asthma since her childhood in rural Africa, but this was not diagnosed as asthma until she came to the UK in 1979. At 22 she was able to leave the arranged marriage she had been in since age 12, and her asthma 'disappeared overnight'. It returned when she was 33 and pregnant with her third child. Attacks are triggered by respiratory infection, pollution (leads to wheezing), stress and, she thinks, being overweight. She normally has an asthma attack every two or three years: two years ago, a bout of flu triggered a severe attack that required treatment with oral steroids for one week. She coughs rarely, and does not feel congested. Though her asthma is normally controlled, she wants to avoid the possibility of any more serious attacks, and is also unhappy about being dependent on asthma drugs: she hopes that BBT may be a way to improve this situation.

Christina is very active, goes to the gym almost every day, and swims and cycles frequently. She eats a very healthy vegetarian + fish diet, but suffers intolerance to certain foods, particularly wheat and dairy, which she avoids.

Her present drug regime is:

- Ventolin: 2 puffs bid
- Seretide: 2 puffs once daily (though originally prescribed bid).

On examination, her BP was 118/80, her pulse 69, and her CP 17.

We discussed the importance of breathing through the nose only, in order to avoid hyperventilation: she said that she was not aware that she breathed through the mouth, and she was not obviously mouth-breathing during the session. However, she said she would pay attention to this, and carry out the taping as suggested. With respect to exercise, I suggested that she scale down her activity until she had some measure of breath control, but she was clearly unwilling to give up her daily gym sessions. So we agreed that, instead of a walk, she would do the gym circuit with her mouth closed – but I told her it was imperative that she should slow down or stop if she felt she was short of breath, rather than opening her mouth.

I showed her how to take her pulse (she had difficulty finding it), and to do the CP and Relaxed Breathing. I concentrated on abdominal breathing, and on getting her to relax her shoulders, which were raised and tense. Finally, I suggested that she cut down the Ventolin, and ideally use it only when required, rather than twice daily.

Session 2

Christina had had some problems taking her pulse, but otherwise had carried out the breathing exercises conscientiously. One curious factor was that her recorded CP was *always* 18, except for three occasions, when it was 21, 19 and 19, respectively. Christina had found the Relaxed Breathing very calming. She had done one hour's exercise/cycling in the gym with her mouth closed – this was 'hard work'! She had forgotten about the hour's taping, but promised to do it next time. After paying more attention to her breathing, she realised that she did in fact often breathe through her mouth, and was concentrating on keeping it shut. With regard to medicines, she had taken just 2 puffs of Ventolin in the morning, rather than twice daily; I suggested that henceforth she only use it as required.

We revised taking the pulse until she had grasped it, and then did Reduced Breathing and the Extended Pause. She achieved an EP of 30 without problems, though it was 'a bit hard'.

Session 3

Again Christina's recorded figures were remarkably consistent, with a CP of 29 and an EP of 30-32. On four days out of seven she had done either the gym circuit or a long walk, both with the mouth closed. Moreover, she had not used Ventolin at all, though she had continued to use Seretide once daily. When she had become breathless during her walk, she had sat down and controlled her breathing successfully: to improve her control when walking and exercising I taught her the Quick Fix.

She had remembered to tape for one hour every day, and was also sleeping better than before: 7-8 hours instead of 5-6.

I taught her Slow Breathing – she found the counting helpful – and the Maximum Pause: she achieved a CP of 27, an EP of 39, and then an MP of 37, which made me suspect she was confusing the EP and the MP, so I went over this again.

I suggested that she see her GP to try to change Seretide for an inhaled steroid, and wrote down in detail the reasoning behind this, so she would know what to say.

Session 4

Again the recorded figures were unnaturally uniform: the CP1 was always 22, the CP2 always 25, and the final CP always 30! For some reason that she couldn't explain, Christina had not recorded the EP1 and MP1. It transpired that for the final CP she had been doing an EP. So in the Diary for days 22-28 I wrote 'don't push at all' above CP1, CP2 and Final CP; 'add on 5 secs' above EP1; and 'go as far as you can' above MP1.

Again she had had no need for Ventolin; she had had some wheezing, but had been able to control this with the Quick Fix.

Christina found Very Reduced Breathing quite hard, 'a bit like an asthma attack': I explained that the aim was to create some air hunger, and that this would disappear once she 'relaxed into the pause'. I also drew diagrams to explain the different types of breathing. Her figures on this occasion were: CP 26; EP 34; and MP 42.

She has made an appointment for two weeks' time to see her GP.

Session 5

This week Christina's figures, as recorded in the Diary, were less strangely uniform: the CP1 and CP2 varied between 25 and 31, and the MP1 was 40 to 42; however, the EP1 was almost always 34, and the final CP always 31. Nevertheless, the range of figures seemed about right, and we both felt that the outcome so far had been very successful, in terms of breath control and reduction in both symptoms and reliever use. After getting used to it, Christina had found Very Reduced Breathing very calming, and she often spontaneously adopts this mode of breathing. She still finds it hard to breathe exclusively through the nose at the gym, but is persisting with it as the benefits are clear.

I taught Christina some exercises coordinating movement and breathing, and suggested that she scale down the exercises gradually, increasing them again if she caught a cold or if her CP dropped. I also asked her to keep me informed about the outcome of her GP visit.

Case study 6: Claire

Session 1

Claire, 58, is a university professor who has had lifelong asthma. As a child she spent several weeks every winter in bed with 'bronchitis'; she also suffered from eczema. As a teenager she was often breathless and wheezy; this condition seemed to recede in her twenties, but returned in her thirties. Until recently she had one asthma attack per year, always triggered by a chest infection; but four years ago she developed pneumonia, which she feels has 'weakened' her, and in the past year she has had five asthma attacks. In the most recent, which followed a bout of chesty flu in January, she was prescribed oral steroids. She is susceptible to a number of allergens, including cat hairs, feathers, and tree pollen (which causes wheeziness and congestion), and is careful to avoid food dyes and milk, which can be 'problematic'. Stress can also trigger an attack. According to her consultant, gastric reflux is also a factor. Claire comes from a family with a strong history of atopy and asthma.

In addition, Claire suffers from sleep apnoea, which she feels, with some justification, is a 'weight issue': obesity is of course acknowledged to be a major correlate of sleep apnoea, and with a weight of 83 kg and height of 1.54 m (BMI = 35), she is clearly obese. She also takes medication for hypertension: though her blood pressure is now controlled, in the past it has been very high.

Claire has recently started a fitness regime to help her lose weight, which involves a vigorous circuit at the gym. She has a diet high in vegetables and with adequate protein and low-GI carbohydrates, and in the last few weeks has cut out all carbohydrates after 5 p.m., which she says makes her feel better.

Her present drug regime is:

- Seretide: 2 puffs bid (through a spacer)
- Montelukast (leukotriene receptor antagonist): 1 tablet (10 mg) at night
- Ventolin: as required (she doesn't use this much because 'it makes her heart pump')
- Cetirizine (antihistamine): for hayfever
- Omeprazole: for reflux
- Ranitidine: for reflux
- Doxazosin (alpha-blocker): for hypertension.

On examination, her BP was 141/99, pulse 66, and CP 7. In fact, her first CP was 16, but she was clearly trying too hard, and gasping for breath afterwards.

We went through the basic sequence of taking pulse and CP, and practising Relaxed Breathing. She had a lot of upper chest movement, but when I got her to monitor her breathing by placing her hands on her upper and lower chest, she started to grasp the idea of diaphragmatic breathing, and was encouraged by this.

Since she hardly used her Ventolin, we did not discuss her drug regime for the time being. I did stress the importance of nose breathing and avoiding hyperventilation, and ways of facilitating this, i.e. taping and the 15-minutes daily walk with the mouth closed. She objected that she wouldn't have time to do the walk as well as her daily

gym routine. As with case study 5, I felt that very vigorous gym exercise was not a good idea until she had gained some measure of breath control (but even more so in this case, as Claire's breath control was that much poorer). However, as she refused point-blank to suspend the gym routine, we agreed that she would do the circuit less strenuously, *with her mouth closed*, and that if she felt short of breath she would slow down or stop, and not breathe through her mouth.

Session 2

Claire had filled in the Practice Diary for the first five days, but had been unable to do anything for the last couple of days, as her nose was swollen and quite blocked because of hayfever. For the days she had completed the diary, the figures were very low, with a maximum CP of 7. She had not taped during the day, though surprisingly she reported that she was able to do the gym circuit without problems while breathing through her nose only (this was, of course, *before* she was afflicted with hayfever).

I checked her blood pressure again, and as this had dropped to 130/89, decided that it would be safe to teach the Extended Pause as well as Reduced Breathing. During this session she achieved a CP of only 6 and a maximum EP of 11. As congestion was a major problem at this time, I taught Claire the three sets of nose-clearing exercises – Nodding, Tipping, and Hold and Blow – to try to improve this situation, but also suggested that she try to change her hayfever medication, as the antihistamine she was taking was clearly not very effective.

Session 3

Claire's hayfever had somewhat abated, but she had still only completed the Practice Diary for two days, pleading work pressure as well as illness. She felt that the nose-clearing exercises had helped slightly with the congestion. Her CP had still not risen above 7 – a figure that was confirmed by the sequence that she did during the session. We worked again on ways to promote diaphragmatic breathing, such as hands behind the head (in standing and lying position) and sitting on the hands.

I explained that one could not expect any improvement in breath control with Buteyko unless one did the exercises regularly and conscientiously. As I was shortly going away for three weeks, I suggested that, when her health and work commitments permitted, she restart the exercises, using Reduced Breathing, with nose-clearing exercises before each session, and record the results. She agreed to do this, and also to start taping, which she had not done up to this point. We made an appointment to meet after my return.

Postscript

Claire cancelled the following appointment, saying she had been so busy that she had been unable to do the exercises regularly. She promised to contact me when she had more free time, but so far has not done so.

Case study 7: Julian

Session 1

Julian, 24, an academic assistant doing his Master's, consulted with severe asthma controlled by medication. He has been asthmatic since birth (was a 'blue baby') and has been medicated all his life. As a child he used Ventolin and Becotide, but during his teenage years his asthma became worse 'as a result of doing sports'; at this point he was prescribed two oral steroids in addition to his reliever. At 15-16, owing to his worsening condition, a leukotriene receptor antagonist (Zafirlukast) was added to his prescription.

Exacerbating factors are stress (++) and lack of sleep: his asthma is worse towards the end of the week because he is unable to get enough sleep on workdays, and in fact is woken by his asthma once or twice a week (always towards the end of the week). He is highly atopic, and very sensitive to airborne allergens and animal hairs: he takes medication for hayfever from March to November. Certain foods (notably cheese) will cause severe migraine accompanied by anaphylactic-type reactions (throat tightening + dizziness, rashes); and ibuprofen causes throat tightening followed by vomiting. He also suffers from nasal congestion, which is worse in the morning and in winter; his nose has been broken in two places, which gives him limited air on the left.

His diet is poor, high in carbohydrates (inc. French fries) and junk food, and very low in green vegetables and fruit. He usually walks about 30 minutes a day, but walking too fast aggravates his asthma.

On examination, his BP was 123/70, pulse 71, bpm 20, and CP 10.

His present drug regime is:

- Zafirlukast 20 mg: 1 tablet bid
- Symbicort: 2 puffs bid
- Atrovent (antimuscarinic): 2 puffs bid (he is negotiating with his asthma nurse about discontinuing this)
- Ventolin: 2 puffs 3-4 times daily + 1 puff in morning + 1 puff in evening
- Fexofenadrine: 180 mg per day (March to November).

For the first session we concentrated on basics: how to take the pulse and CP, and how to do Relaxed Breathing, with particular stress on relaxing the shoulders and upper chest to allow abdominal breathing to take place (something he seemed to grasp almost immediately). I also emphasised the importance of breathing nasally at all times; he agreed that part of the daily walk that he does already would be carried out with the mouth closed, and that if he felt short of air he would slow down or stop until he had regained control. Julian also agreed to tape for 1 hour per day. I suggested that he scale down his Ventolin use, and try to use it only when really needed, rather than as a matter of habit.

Session 2

After one week Julian had experienced a quite dramatic improvement. In general he had used his Ventolin only once in the morning and once in the evening; apart from this he had only used it two or three times in the whole week. He had found that he was able to control any sensations of slight breathlessness by controlling his breathing (though I had not as yet taught him any specific techniques for this). According to his Practice Diary his CP had also increased from 10 to around 17 seconds. Overall he was delighted with his progress.

During this session I taught the nose-clearing techniques (postponed from the previous week), as well as the Extended Pause and Reduced Breathing. Julian experienced a slight air hunger with the Reduced Breathing, but I reassured him that this was quite normal, and that by becoming accustomed to this sensation he would make progress with breath control. During this session his CP was 17 and his EP 25.

We also discussed ways of improving his diet: though he was rather averse to green vegetables he had the idea of increasing his fruit intake by concocting smoothies, and also thought he could persuade his mother (with whom he lived) to cook fatty fish such as salmon a couple of times a week. To further increase his omega 3 intake, I recommended a fish oil supplement.

Lastly, we went through the Quick Fix and mini-pauses to help him maintain breath control during exercise (although he was already managing pretty well with this). He agreed to tape at night, and I advised him to sleep on his side (as it transpired that he sleeps on his back). In addition I suggested that he test his peak flow only once, rather than three times, per session, as breathing in this way encourages hyperventilation.

Session 3

During this week Julian had not used his Ventolin at all. He had become breathless only twice, and had controlled this with the Quick Fix (though he said this left a slight pain behind his left eye for 10 minutes). He had taped at night without problems, had slept on his right side, and had reduced his peak flow testing as advised. With respect to diet, he had been making smoothies of various fruits (bananas, apples, pears, blueberries and raspberries) every day, and had had salmon for dinner once. In the Diary, his CP was around 19 seconds and his EP 28. He had been slightly extending the Reduced Breathing pauses to 2 seconds.

In this session Julian learned the Maximum Pause (MP) – including distraction techniques) and Slow Breathing, and we ran through a sequence CP $\rightarrow$ EP $\rightarrow$ MP using Slow Breathing. His CP was 21 seconds, and he achieved an MP of 61. He appeared to have grasped the technique of abdominal breathing.

I explained in some detail the value of discontinuing Symbicort, which combines a long-acting beta2-agonist with an inhaled steroid, and continuing with just the inhaled steroid, while using a short-acting beta2-agonist such as Ventolin as a reliever in case of need. Julian intends to see his GP as soon as possible to discuss this.

Session 4

This week Julian had completed a 15-minute run, with his mouth closed, and was not out of breath. He said that this was the first time he had been able to do this for 10 years. He had not used the Ventolin at all during the week. His final CP had gone up to 27 seconds, and his asthma nurse was impressed by these results. His peak flow had also risen by 50, to 560 (target 640) – he had never experienced this kind of jump before.

In this session Julian learned Very Reduced Breathing, which he found quite challenging: during the sequence that we ran through (CP $\rightarrow$ EP $\rightarrow$ MP), his breathing was slightly noisy, with some largish breaths after the pauses. I reassured him that this would become easier once he had 'relaxed into the pause', and explained the concept of 'resetting'.

Since we would not be able to meet again for a month, I suggested that he continue with the exercises for two weeks or so, then gradually reduce them. We also discussed incorporating the exercises into daily life – breath holding while going up stairs etc – but I felt that he has already largely achieved this.

Session 5

After the previous session, Julian continued the exercises for two weeks, then cut them down to once a day before stopping them. Overall his last results were approximately: CP 20, EP 27-30, MP 60. Although I felt the CP was slightly disappointing (I didn't say so), he was very happy with this, since he felt that Buteyko had dramatically improved his asthma. Since the last session he had only used Ventolin once, which he felt was explained by the fact that he was on a visit to the zoo at a time when the pollen count was extremely high (i.e. two simultaneous triggers).

Julian's GP was completely against the idea of Buteyko, notwithstanding the improvements. He insisted that Julian continue with Symbicort for another six months, and only then, if Ventolin were no longer needed, would he consider replacing Symbicort with an inhaled steroid. However, since his GP is about to retire, Julian hopes to get a more sympathetic doctor in the near future. He is also pleased because he is no longer using Atrovent. On his own initiative he has cut down the Symbicort to 1 puff twice a day, though I did warn him about the dangers of reducing steroid use too rapidly.

We went through some simple physical and progressive relaxation exercises; however, he already uses relaxation exercises from his previous drama training. Finally, I recommended that he check his CP every day, and that he step up the breathing exercises if either the CP started to fall or he got a respiratory infection.

Case study 8: Pamela

Session 1

Pamela, 57, a university lecturer, consulted with moderate asthma controlled by medication. She has a history of atopic conditions dating back to infancy (she had eczema from age 6 months), and was often in hospital with eczema when young; she also used to have severe asthma attacks as a young adult. At that time she relied on Ventolin, but since being prescribed Symbicort (25 years ago) she has not needed any short-acting reliever medication. For the allergic symptoms she takes Piriton daily; previously she had severe reactions to cat and dog hairs, as well as dust and certain chemicals, but these have largely abated with the use of Piriton. She still gets hayfever, but this no longer leads to wheezing, as it did before her present medication regime. She says that one side of her nose is always blocked, and believes she may have polyps. She sleeps on her side, though her husband says she snores.

The only factor that can lead to slight breathlessness at present is getting a cold. She is not usually troubled by coughing, though before her present regime a cold would lead inevitably to a cough and thence to an asthma attack.

Two years ago she was hospitalised with pericarditis, and later the same year was admitted to hospital with tachycardia/fibrillation. Neither of these episodes brought on an asthma attack. She feels that fibrillation is no longer a problem: she was able to control a later attack by 'controlling her breathing', though she now has medication (Flecamide) that she can take if this occurs. She also takes 30 mg of aspirin bid.

Her present drug regime for asthma is 1 puff of Symbicort every morning (plus, if she has a cold, 1 puff at night). She has Ventolin in reserve, but doesn't use it. This is in addition to Piriton, the heart medication, and various creams and ointments to control her eczema.

Her diet is unremarkable, with a reasonable amount of vegetables and fruit. She describes herself as 'always on the go', and recently was able to do an intensive dancing class without wheezing. However, she feels her asthma control could be better, and is unhappy about having to rely on so much medication.

On examination, her BP was 128/66, her pulse 70, and her CP 15 seconds.

In this first session I first explained the importance of nose breathing, and the ways to achieve this (taping, 15-minute walk, etc). We also went through the nose-clearing exercises, as well as the pulse, CP, and Relaxed Breathing; there was a fair amount of abdominal movement indicative of diaphragmatic breathing. I explained the rationale of replacing Symbicort with an inhaled steroid, even if this means carrying Ventolin (which she no longer does) for security; she is going to book an appointment with her GP for 2 weeks' time to deal with this.

Session 2

Pamela had found the exercises very relaxing (from the Practice Diary, her final pulse was always marginally lower). However, she didn't like the tape, but concentrated on

keeping her mouth shut for one hour. Also, she had found walking with her mouth shut difficult, though yesterday she finally managed it. I reiterated how important it was to breathe through the nose when exercising, even if this meant slowing down or, indeed, stopping. She felt that the nose-clearing exercises had helped a bit with the feeling of blockage in her nose. I felt that the CPs she had recorded looked suspiciously high (some were around 35), and wondered if she was pushing it too hard: she in fact said that she thought she was opening her mouth after the pauses. I stressed again that the CP was a *measure* of breath control and not a performance, and that it shouldn't be forced, particularly to the point where one had to gasp for air. When I tested her CP she only achieved 10 seconds, but on this occasion it was clear that she was breathing out too long beforehand, giving her an unnaturally *low* CP – all of which I explained.

Given her previous problems with fibrillation I thought that the Maximum Pause might be a little risky, but decided that the Extended Pause (EP) would probably be safe, particularly since she had had no heart rhythm problems for over a year. We then went through the sequence using EP and Reduced Breathing. With the Reduced Breathing she said that she was 'trying to find her breath': I assured her that this sensation was normal, and would ease off once she was accustomed to it. The longer pauses she found 'much harder to sustain', though she achieved an EP (adding 5 seconds) of 23, suggesting a CP of 17.

Finally, I taught Pamela how to do mini-pauses to help her control any feelings of breathlessness while walking. She agreed to try taping at night.

Session 3

Pamela had found the longer holds difficult, but had persevered. The air hunger induced by Reduced Breathing had initially left her with a sensation of slight giddiness, but this had soon gone off. She had completed the 15-minute walk everyday – which she found particularly challenging in the hot weather – and had successfully used the mini-pauses on several occasions to control feelings of breathlessness.

I then taught her Slow Breathing, and we went through a sequence using this with CP and EP. The Slow Breathing again gave her a feeling of 'airlessness inside' combined with slight dizziness, but since she had been through the same thing the previous week she was unconcerned by this. Her CP was 17 and her EP 29 seconds. I noted that there was still a certain amount of upper chest breathing, so we went through some exercises designed to encourage diaphragmatic breathing: Lying on the Beach, Hands behind Head, and Sitting on Hands.

Since there would be a long enforced gap (one month) before our next session, and we had only completed three sessions, I suggested that she continue, as far as possible, to do the exercises regularly.

Session 4

Pamela reported that her life had been 'manic for weeks'. She had continued the exercises, but on some days had been less strict; also, she had been doing the daily walk, but not every day. But she had more or less integrated the exercises into her daily life, for example doing mini-pauses when walking uphill. She said she had

become more conscious of pollution, and this had been a further incentive to keep her mouth shut. She had, moreover, been taping her mouth, both during the day and at night: she was surprised at how well the latter made her sleep. Again, she had been doing the last set of exercises of the day in bed, and felt that this also helped her to sleep better.

Her normal CP (as recorded) was now 30-35; she said that she had been 'setting a goal of 40' for the EP, and that this was easier if she was distracted – reading, watching TV, etc. I felt in essence that this was a kind of Maximum Pause that she had decided on herself – but since this seemed to work for her, and she had had no problems with it, I didn't discourage it. I then taught her the distraction techniques used for the MP.

In this session Pamela learned Very Reduced Breathing, which she found 'quite hard': I used sketches to explain the idea of 'sipping the air'. Her CP was 31 seconds.

She had not yet managed to see her GP, but for the past week had been taking Symbicort only on alternate days. I told her that it would be better to replace the Symbicort with an inhaled steroid.

Session 5

Pamela considered that she had got even better results with the Very Reduced Breathing, and felt most relaxed with this. On occasions her pulse had reduced significantly (by up to 10) during the breathing exercises. Her average final CP was 30-36. The only problem, she suspected, was that instead of 'resting in the pause' she continued to breathe out, thus increasing her need for air and shortening the pause. I suggested that while resting in the pause she concentrate on not breathing at all – neither out nor in – until necessary.

We went through the progressive relaxation exercise, but she is already familiar with similar yoga exercises (e.g dead man's pose). She intends to continue to do a set of breathing exercises once daily before bed, and will step these up if her CP drops or if she catches a cold.

Telephone conversation (one week later)

Pamela finally saw her GP about changing her medication. She said she had obviously caught her on a bad day, as the doctor quite unexpectedly 'blew up', and told her in a fit of pique that she could just come off the Symbicort if she wanted to. The GP said she would also take her off Ventolin. Pamela felt this was quite unreasonable, given the results she had achieved, and a rather hostile interchange ensued. Later the doctor calmed down, and suggested that Pamela just reduce the dose of Symbicort. However, Pamela did supply her with the information about the British Thoracic Society's recommendations, and she thinks that the GP may actually consult these, and hopefully come back to her with a more reasonable attitude.

Case study 9: Richard

Session 1

Richard, 65, is a self-employed decorator who suffers from late-onset asthma. This started 7 or 8 years ago, when his lifelong smoking habit led to wheezing; on examination he was diagnosed with asthma. He stopped smoking and was prescribed 'inhalers' (type unspecified). Since then he has had 2-3 minor attacks and one severe attack 3 years ago in the middle of the night. Last autumn he developed a very heavy cough, together with a postnasal drip that started about 2 hours after waking and lasted for 2 hours; this was treated by his GP with an antihistamine (Loratadine), which he says 'helped a lot'. Recently the cough returned and he was given another prescription for antihistamines. He feels there is a strong allergic component to his asthma, though he doesn't suffer from hayfever; he does, however, have a very strong inflammatory reaction to insect bites. He also has a 'sniffy nose' in the morning, and has been prescribed Flixonase for nasal congestion; from experience he knows that, if he stopped using this, the congestion would return within one month.

At present he has little wheezing, and feels that his asthma is well controlled. His peak flow rate is 520-540.

His only other health problem is quite severe diverticulitis, with frequent bowel movements.

His present drug regime is:

- Seretide 50: 2 puffs bid (administered with spacer)
- Flixonase: 1 puff 2-3 times a week
- Loratadine

He also keeps Ventolin as a backup, but hasn't used it for 3 years.

His diet is a little top-heavy in carbohydrates (toast and biscuits) and copious amounts of strong coffee, but with a reasonable amount of fish, vegetables and fruit. He drinks 2 vodkas a day, and his only exercise is his work.

On examination, his BP was 138/87, pulse 67, and CP 11 seconds. It was also very clear from the outset that Richard was an inveterate mouth-breather.

In the first session I underlined the paramount importance of nose breathing at all times, and he agreed to tape for one hour and do a 15-minute walk with the mouth closed (insofar as his work schedule allowed). I also taught the nose-clearing exercises as well as the basic sequence, with pulse measurement, CP and Relaxed Breathing. Since there was a lot of upper chest breathing (as well as some abdominal movement), we discussed ways to facilitate diaphragmatic breathing, such as putting the hands behind the head.

Session 2

There was clearly a misunderstanding concerning the completion of the Practice Diary: Richard had done the exercise sequences for 5 of the 7 days, and had recorded the opening and final pulse, but had failed to fill in the CP boxes. However,

he had measured the CP. which he said was between 10 and 16 seconds. Interestingly, the final pulse was substantially higher than the initial pulse *twice* on the very first day, but thereafter was the same or marginally lower, presumably as he became more comfortable with the exercises. On most days he had taped for one hour, but his 'daily' walks were rather more erratic. He said he had walked up a steep hill, but was forced to open his mouth halfway up; I explained that in such cases it is essential to keep the mouth closed, even if one has to stop.

I taught the Extended Pause and Reduced Breathing, and we went through a sequence. His initial CP was 14, and his EP 22. We also looked at using mini-pauses to counter feelings of breathlessness during walks.

Since he admitted to sleeping on his back, I suggested that he sleep on his side and tape at night.

Session 3

This week Richard had filled in his Practice Diary more or less correctly, though he had still not entered the final CP. His CP was usually 14-15, with an EP of 19-21. He was pleased because his peak flow was up from 540 (his normal reading) to 560, and he had managed to do a long walk uphill with his mouth shut and without wheezing. He had taped at bedtime, but had always ripped the tape off during the night.

In this session Richard learned the Maximum Pause (MP) and Slow Breathing. I suggested distraction techniques for the MP, such as tapping the chest and walking around, but he seemed rather reluctant to do this (though he is not the only patient who has seemed inhibited about getting up and walking around the room!). His CP was 21, with an EP of 29 and an MP of 36. However, his second MP was only 27, and I felt that possibly he was confused about the different types of pause, even though I thought I had explained it clearly.

I also suggested that he make an appointment with his GP to ask him to replace the Seretide with an inhaled steroid.

Session 4

It transpired that this week, instead of CP $\rightarrow$ CP $\rightarrow$ EP $\rightarrow$ MP, Richard had simply done a sequence of four EPs – we obviously have a communication problem! The EPs ranged between 22 and 30 seconds. He said he had become much more aware of when he was mouth-breathing. Also, he had got used to Slow Breathing, which initially he found difficult. He often did the breathing exercises with his hands behind his head to encourage diaphragmatic breathing.

In this session I taught Very Reduced Breathing, making sketches to explain the difference between the different techniques. He found this quite difficult at first, but easier by the end of the session. His CP was 19, EP 27 and MP 39 seconds. We also discussed the importance of integrating techniques such as Reduced Breathing into daily life.

Since we would be unable to meet again for 4 weeks, he undertook to continue the exercises, taping, etc, for at least 2 weeks.

Session 5 (one month later)

Richard in fact continued the exercises on a fairly regular basis for a further 3 weeks; he discontinued taping after 2 weeks, since he 'knows he has his mouth closed' (I'm not totally convinced about this). He had found the Very Reduced Breathing the most difficult to master. He hasn't woken up with a dry mouth recently, which used to be a problem. His final CP was 30-32. However, since his asthma is well controlled, he feels that the real test would be if he started wheezing, for example when he came off the Seretide (he had made a GP appointment for the following week). I emphasised the importance of checking his CP regularly and resuming the exercises if it fell, especially after reducing medication. I also mentioned the possibility of doing a refresher session at this time.

Email communication (3 weeks later)

Richard had seen his GP, who was happy to change his prescription in the direction I suggested, as follows:

- Qvar 100 (beclometasone diproprionate): 1 puff bid
- Avamys (fluticasone furoate): 2 sprays in each nostril daily
- Ventolin (as backup).

He has not yet started this, as he has a light head cold, and wanted this to clear before beginning a new regime.