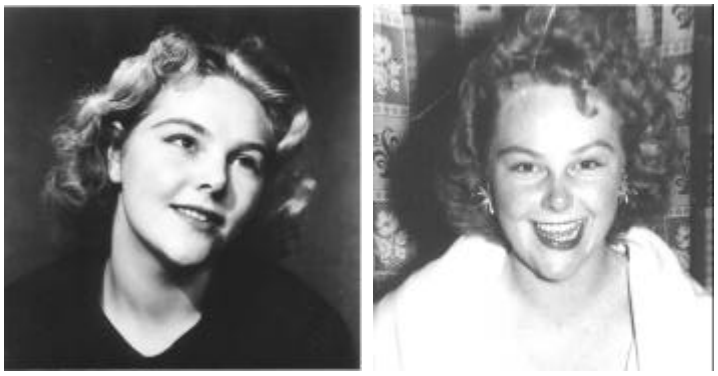
__Angela Caine__ says we are neglecting the voice, with disastrous consequences for emotional and physical well being.

Not only canaries need sing-

SOME TIME AGO I heard an interview on Woman's Hour between Jenni Murray and Dame Alicia Markova, who is old enough to have met the legendary Russian Dancer, Pavlova, yet still has the energy and enthusiasm to help develop and administer ballet in the UK.

'Did she give you any advice?' Jenni Murray asked. 'She just said: 'You want to be a great dancer? Take care of all your teeth.' I did not really understand but I have always followed her advice. Maybe someone can one day explain...' Perhaps, to discover what she might have meant, someone had to come along who had all the potential to become a performance high flyer but did not look after her teeth.

When I was 17 years old it was clear to everyone that I was going to be a singer - maybe even a great one. Although performance is never a secure profession I had more going for me than most. I had already been accepted for a premier music college and, by my last year of training, had gained a scholarship for further training, had given concerts as a soloist with the BBC and was receiving other offers of work. Like the young Alicia Markova, barring accidents, I was on a predictable pathway.



Angela at 20 and right, at 21

Then an enthusiastic dentist took out my wisdom teeth. "Most people have problems with them in their mid-20s. In your profession you have to be reliable. Your lower right is already becoming impacted and this indicates that you will have problems in a couple of years," he told me. Grateful for the warning I went into hospital and had all four extracted under general anaesthetic. I suffered quite a lot of toothache afterwards and on each occasion a molar tooth was removed. Within six months I had gone from looking as in the first photograph at aged 20 to looking as in the second photograph on my 21st birthday (above).

Unbelievable as it now seems, no one noticed this change in my appearance. Neither did anyone connect the failing of my voice, which was to follow, to the extraction of my teeth. Forty years ago teeth were merely 'the white bits' of the dental complex and their effect throughout the whole human system was not known.

Forty years ago, when my voice lost its star quality, Pavlova was not around to say: 'This is the fault of your dentist.' I now know, however, from personal experience, research and collaboration with professionals from dentistry, osteopathy and chiropractic, that the way we treat the teeth and voice are vital to our emotional and physical well being.

Losing my grip

Within a year of the wisdom teeth extractions, I was starting to have problems with my voice. It seemed to play tricks on me, I sang out of tune, made other mistakes and quickly lost my confidence in both my singing and myself. I desperately tried to discover what had happened to my voice, my enjoyment of singing and the superb sense of rhythm and timing, which had secured me most of my professional musical work. I practised and worked and even took singing lessons again with various different teachers but, as the struggle for me just became greater and greater and other singers apparently had no problems, I became fearful and then angry.

Fifteen years into the problem I auditioned for the part of the Countess in a production of *The Marriage of Figaro* but my singing was so out of tune and harsh by then that I was finally, and with obvious kindness, offered the part of the old and buffoon-like Marcellina. I listened and watched as the woman who took the part of the Countess glided through the role I felt I ought to be singing, while I missed musical entries and tripped over steps. After one performance, as I eased my car out of a snowbound car park, there she was, coat pulled up around her face, walking right across my headlights. I switched off the engine and sat in my car terrified that I was going mad. I had had to stop myself running her over.

I have often wondered what I would have done next, had all my life been devoted to my career at this point. But I had long since given up all ideas of a stunning professional singing career and had married and taken a post in a secondary school, teaching music and PE. After all, many young people have ambitions, which fizzle out in their early 20s.

But this did not explain the voice problem. It was now affecting my speech and, through that, my relationships with everyone around me. My voice was pushy and harsh. I spoke too soon, inappropriately, became too much of a force to be reckoned with. My earlier character and personality seemed to have been lost. Effort, drive and mania were on the increase. My marriage and my life fell apart.

Seeking a solution

I discovered the Alexander Technique[1] much as F M Alexander had discovered it - through my voice problems. (By singing in front of a mirror, Alexander discovered that the relationship of his head and neck affected his voice. He developed the Alexander Technique as a system to help the body move most freely and with minimum effort, for which the head and neck relationship is pivotal.) As difficulties in my life escalated throughout my 40s and my children grew up and left home, grateful to be away from the mess of it, I decided to train mind and body to stop driving me, if I possibly could. I enrolled in a full time course to become an Alexander teacher.

At the end of the first term, my training director sent me home with a balance board (a simple board with a roller to place underneath it). 'Practise with this so that you can learn to stand still,' he said. "When you can stand still with your whole weight balanced evenly on two feet you will be able to sing." I had had no Idea that I never stood still. And I cannot begin to describe the terror of my attempts to stand on that board. My legs trembled and shook as I attempted to get on it. To be in the same room with it quickened my breathing to panic level. I began to see that I experienced the same panic in any place where I was expected to be still. Meditation (part of the course), for instance. After five minutes kneeling with my eyes closed, my hips and knee joints hurt and my head felt ready to explode. In tutorials, after such sessions, I would argue with my tutor or walk out to spend the rest of the day on the hillsides alone, crying uncontrollably.

I could not explain the panic I felt at having someone unbrace my knees by moving them slightly while I looked out of the window and over the town roofs. I would tense my whole body and grip the floor with my feet, and after several attempts this was seen as a refusal to co-operate. At the end of the third year I was advised to leave, unqualified, as unsuitable for further training.

Back at home my organisational skills were failing. I embarked upon schemes, which would fail, just as I began to realise them. I ran out of steam at the 11th hour. There followed recriminations, guilt, manic efforts to make good, a hysterical outburst and then depression at my total failure to do anything properly. My second husband and friends advised me to seek help to sort out my self-destructive behaviour. Counselling was suggested.

The source of the problem

Then I had a chance meeting with a dentist member of the Society for the Study of Craniomandibular Disorders (Cranio Group), which studies the relationship between the head and upper torso and how that affects the functioning of the body. Members are mainly dentists but there are also interested osteopaths and chiropractors (and now, one voice teacher). This dentist introduced me to the startling possibility that my difficulties stemmed from a balance problem, resulting from a lack of molar support. Teeth extraction, he said, might have reduced my skeletal strength. Because I had lost most teeth one side than the other (to deal with the toothache that kept occurring after the wisdom teeth extractions), one side of me was collapsing.

I learned that teeth are connected directly to the central nervous system[2]. They come together naturally as we swallow and this is reference for our whole upright posture and balance. If they do not come together in a good bite (what dentists call occlusion), this can affect:

- swallow, resulting in a swallow like a pelican;
- the way the postural muscles of the head and neck work, which maintain the balance of the head on the spine and deal with movement of the upper limbs;
- the position of the weight bearing pelvis, which transfers the weight down the legs in a balanced way;[3]
- the feet, which flex in response to the ground; and
- the voice, which is suspended in the centre of the upper body muscle complex and depends, for its excellence, on the symmetrical balance of that suspension.

I was unbalanced and literally falling over for almost 40 years of my life. I had to make an enormous effort just to do anything, because of this. So the extra speed and energy I put into things was essential just to keep me on my feet. As a result, my throat was always tense, because the throat is in the centre of that crucial head/neck area. (That explains to me why Alexander came to his discoveries about the head and neck through the voice.) Stillness required ability to balance which was beyond me - hence the fear. Because the vocal mechanism is suspended centrally from the cranium and relies on symmetry for its function, the more I struggled to sing with my balance problem, the more stressed I became.

Right, at age 50. The centre of gravity is shown by the position of the roller under the board. Short neck, collapsed feet; right knee turning in; forward pelvis. Above, close-up of the face above the feet when on the balance board. Lines should be parallel and horizontal.

The road to recovery

I embarked on a long course of correction. Bridges were fitted to fill some of the spaces in my mouth and a bite plate temporarily aligned my jaw until my body could be assessed and stabilised by a chiropractor. This immediately changed my tongue position and as a result my swallow and my breathing[4]. Finally, for the first time since I was 21, my voice stopped getting any worse.

Very soon I began to speak with a calm authority and stand my ground without hysteria because I could think without panic and quietly state my case. Although I had a long way to go, even at this stage I observed that the unstable and dithering voice within my collapsing posture had created a victim. I was perceived as a hardworking but explosive Idiot who

Angela Caine runs The Voice and Body Centre, which uses exercise systems to work the voice and the body together and is open to anyone, adult or child, whose voice doesn't work efficiently for them. She **is** a member of the Cranio Group, the Society for the Study of Craniomandibular Disorders, and has written the first singing- based exercise programme for children which co-ordinates the development of voice, posture and dentition. She is author of The *Voice* Workbook and audio work tape', published by Hodder Headline in 1991, and recently wrote the first chapter on voice to appear in a dental text book.[4] She is also a performing singer.

was okay as long as she was not taken seriously. Of course that was correct, until now...

I began to sing again without the terrible frustration of hearing my voice sounding harsh and out of tune. I found overwhelming joy in singing the songs and arias I had feared to attempt for some 20 years because the notes were unavailable and somebody would hear me and I could not bear it. I had a new energy, a zest for life, which came from within and was renewed and increased with each improvement in my singing. I wanted to sing to other people. I wanted them to hear me and share this joy.

With the renewed confidence in my voice, my behaviour began to change. I began to deal with day to day situations more confidently too. I knew I had discovered something which was absolutely vital to my life and wondered how many more there might be like me. But people who were close to me found these changes difficult. The result was yet another divorce.

Singing is the primary function of the voice. We are born singing. Someone else teaches us to speak.

Observing that each Improvement in my body was accompanied by an improvement in my singing, chiropractors, osteopaths and dentists in Cranio Group became interested enough to ask their own patients about their voices. In professional voice users, such as schoolteachers, lecturers, actors, managers, etc, they found that structural misalignment was always accompanied by restricted voice.

I myself conducted a pilot study[5] on 12 singing students who had started their course with ambitions to perform. Nine had had premolar teeth removed at about 11 years old, for overcrowding, and subsequent orthodontic work carried out to close the gaps and all were now, at 18, having difficulties with singing. Their singing was limited in pitch and resonance and there appeared to be a corresponding Impact on their physical and mental health.

One tenor had lost his voice at 18, gave up singing and also proceeded to lose his confidence in life entirely. He could no longer ski or play tennis, which he loved, so his whole social life was affected, as well as his chosen career. At my suggestion, he saw a dentist from the Cranio Group, and underwent a programme of arch widening which will be completed by putting his teeth back as bridgework. This will maintain the expanded arch for life - as his natural teeth would have done. He is now singing again, his confidence is back and he is living life to the full once more.

Two of the students became more and more disillusioned by falling marks and a workload they felt they could not cope with. In the last year of their course both suffered from flu, laryngitis and tonsillitis whenever exams or similar pressure occurred. At the University's Health Unit they were prescribed tranquillisers and advised to have counselling for stress which, they were told, most students suffered from, especially in the third year.

I persuaded them to have chiropractic treatment to adjust some of the structural misalignment caused by the 'quick fix' orthodontics. They also stopped taking the prescribed drugs. Within three treatments their singing improved and within three months they were beginning to make quite different long-term plans.

One broke off an engagement because she felt 'different' and realised the plan to marry had seemed the only path to take at the time, as she had felt unable to cope with setting out in life alone.

My own dental/skeletal/voice correction has taken 10 years but trying to cope with it for so long compounded the problem. If structural problems can be detected during development, however, different growth patterns can be encouraged by accessing natural self-righting body systems.

How it all goes wrong

Seven weeks after conception, a foetus is aware of sound. When the mother sings and speaks she begins to communicate with her baby. The action of singing brings steady breathing and makes the body more flexible and relaxed, which also communicates itself to the baby and helps both prepare for the birth process. The journey down the birth canal compresses the baby's bone structure but nature has provided self-righting mechanisms for this, in the form of primitive reflexes, and the physical response to the rhythm and sound of the singing voice is a powerful stimulus within this process[4] (It is in this early time that windows are opened for later communicative and music making skills).

However, recovery from the pressure of the birth canal is not always assured, for instance, if delivery was very long or very fast or, especially, if forceps had to be used. Then, even with the best of care and intentions, affected children develop the two arches of their teeth within a skull that is not quite symmetrical. The Cranio Group would like every baby to be seen by a chiropractor or osteopath early enough, while the infant skull is very soft and pliable, for the bones of the cranium to be checked for alignment. Recovery from the pressure of the birth canal would then be assured.

It would also be preferable if extraction of the premolar teeth between about 11 and 14 were not standard orthodontic practice for children with crowded teeth. This may straighten the teeth but at the same time it destroys bone tissue and limits craniofacial development[6]. The evidence from my pilot group indicates it also limits the voice, misaligns the body and reduces life potential. Just how much, I wonder, of this potential is being lost. It is now possible to correct these problems with co-ordinated cranial and (earlier) dental treatment and not lose any teeth.

Developing dental or postural problems are not necessarily noticed, by ourselves or others. For instance, to facilitate breastfeeding, the infant's tongue lies entirely in the mouth. By the age of six the tongue should have shifted backwards and downwards so that it forms a right angle, two thirds of the tongue forming the front wall of the throat and one third suspended in the mouth. In this position the tongue can co-ordinate with the soft palate for nose breathing and also articulate vowels and consonants most efficiently.[7]

This shift should happen naturally with the good development of dentition and increasing use of the voice, especially in singing. Underdevelopment of the facial bones through birth trauma, coupled with a lack of good tongue exercise through lack of singing, can

leave the tongue in a forward position and the child will constantly breathe through the mouth. Severe cases can result in tongue thrust, a condition where the whole respiratory tract lies too high in the throat for efficient breathing and the tongue is forced against the front teet[8]. As well as forward head posture and poor balance, it causes speech and communication problems, which can eventually lead to personality problems.

A small child whose tongue is in the wrong place probably stumbles over reading and may well stammer, doesn't like climbing trees, can't catch a ball very well, doesn't like somersaulting and can't run fast because the body is unbalanced and everything is too much effort.

Eye, ear, voice, posture and brain must develop co-ordinated skills if the child is to learn easily[4]. What children see and hear must match, if they are to be upright and think clearly. Unfortunately young children are now bombarded with visual stimulation, often to the accompaniment of very unnatural sound - for instance, real-seeming characters on television speaking in unnatural voices and moving in unnatural ways. This mismatch does not encourage good postural balance. A child sitting before a screen will gradually lose balance and collapse in the direction of whatever is over-stimulating and fixing the vision, even sooner if the tongue is too far forward. We learn most, and the most efficiently, when we can absorb information and test it with all of our senses.

Each person has a Physical Adaptive Range[3] or PAR. It enables us not to be structurally symmetrical and perfect and still extend our limits. In terms of what we want to do, PAR is like money in the bank. The more efficient your structure, the less PAR you use. If we can develop the natural stimulants of singing and playing music, the mind, voice and body are constantly revitalised and rebalanced. But it is important for everyone to start out on life with as symmetrical a structure as possible. This leads on to a complete and evenly meeting set of teeth and would ensure that the money in the bank will be there when we most need it - in our old age.

Judy Garland[9], a classic birth trauma and dental distress victim whose mother spent three pregnant months throwing herself repeatedly down the stairs trying to get rid of this unwanted baby, struggled all her life to be as good as she knew she could be. As a child under contract for MGM, teeth were straightened and a beautiful smile created in a cranium that was not symmetrical. The consequence of this was muscle build-up everywhere to compensate for the amazing dance routines she inflicted on an unbalanced posture. She developed a permanent weight problem, which was probably due to the postural muscle over-build which had to shore her up. The 'quick fix' for this problem was weight reducing drugs which effectively removed her only support. The real problem was never addressed. She finally ended this unmanageable stress herself at 47.

My own happy ending

1 am now structurally and vocally aligned accurately enough to sing with my full vocal range. The treatment plan included realignment work on my cranium and pelvis and several different dental appliances top and bottom to encourage facial bones to separate and grow. I devised a daily voice and body exercise system so that I could also take some personal responsibility for some of the correction. I have now refined and re- focused this as a voice development and maintenance system suitable for anyone, which I use at The Voice and Body Centre. The photograph (see below) taken recently on a balance board illustrates the difference in appearance the correction has made. The stability is not merely physical, but also emotional and the constant fear of failure has gone. I can remain sitting or standing comfortably without continually wanting to go somewhere and do something, thus making everyone else feel more at case.

My body has also dramatically changed shape. I had a short neck before and a weight problem, in spite of the manic effort I put into my life and playing league hockey. I built muscle for my lack of postural balance and to keep me on my feet. The more I ran around with the misalignment, the more postural muscle had to build.

If I had not been encouraged to sing as a child I might not have discovered my jaw and skeletal problems until the onset of physical pain and by then the problem might have been too great to solve. Instead, at 60, I feel fit and full of life. I have taken on computer technology, am running a successful business and am a performing singer again. I suggest that singing could be much more important than we have realised, regardless of whether we use our voices professionally.

Why sing?

Singing is the primary function of the voice. We are born singing. Someone else teaches us to speak. Singing involves the whole person. It stimulates and exercises breathing, improves posture, helps with the pumping of fluid around the brain, circulation of the blood and all those other rhythmic systems, many of which we do not yet fully understand. It makes us feel good and allows expression for feelings which may

Aged 60. A better centre of gravity and a longer easier body. Jaw no longer veering off to the left.

be too difficult to talk about. Emotions flow out instead of being bottled up, reducing stress levels.

Singing is a natural human characteristic. It brings people together. allows them to communicate in a closer way. When someone sings to you they give you a view of the inside of themselves, which necessitates certain vulnerability - for them to open up, for the listener to receive what they are hearing generously.

Homo sapiens surpassed all other creatures in three distinct ways which are interdependent[10].

• complete upright posture;
• development of the frontal lobe of the brain, responsible for planning ahead for future goals, concreteness of response, abstract reasoning;
• sophisticated speech patterns combined with range of voice pitch and quality surpassing that in any other creature.

The voice is an indicator of how the breathing system is working and the breathing system is affected by everything going on in the body. When your voice feels good, you feel good, you are 'buzzing'. When you have voice problems, such as voice loss, huskiness, discomfort or when your voice does not sound like you, It is telling you that you have a bigger problem that you need to address. Not being able to sing is a voice problem. If such problems do not correct after a voice and body exercise programme, then there is likely to be a dental or skeletal problem which needs assessment from a structural clinician. Voice problems are indicators we ignore at our peril.

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Tragically, we live in a world where singing is on the decline and the human voice sadly neglected. The domino effect from this very serious state of affairs is a parallel deterioration in the skills of reciting and reading aloud, conversation and the appreciation of poetry. Language becomes a vehicle for information but not expression and then live theatre begins to lose its audience. Only the books with a direct plot and simple language will sell. Subtlety gives way to sensationalism. Is that not what we currently have in our society?

Suggestions for a voice revival

Each mother-to-be should sing to her baby a little every day from six weeks after conception - that is when the baby begins to be aware of sound.

Newborn babies should be checked by a chiropractor or osteopath at about six weeks (preferably as part of National Health Service checks) for any lack of freedom in the bone structure, especially of the head.

Babies should be sung to, talked to, read to, while being held and cuddled. Babies need to learn from experience that the voice comes out of the body. Children do not pick up singing from tape recorders, television or pianos, only from other *present* voices, particularly from people they know. Children should also be sung *with.*

The older infant needs skipping games, balancing games, hopscotch, games in a ring, all with singing to emphasise and programme the co-ordination of voice and movement and explore spatial reasoning. Very little of this exists today. Audio equipment dominates musical input and nursery rhymes may be learned from a digital voice on a toy. There are few places or opportunities for a seven or eight-year-old to play safely outside, out of sight of adults, let alone develop regular teams of skippers or games in a ring. The child's world, which is naturally full of singing, is now hard for children to find.[4]

Yet loud, rhythmic singing while skipping and jumping pumps the Eustachian tubes, home of glue ear, and bounces the heavy mechanism of the larynx down the throat where it belongs. The increase in problems such as tongue thrust and glue ear is a sure indication that small children are not exercising rhythm, posture and voice together. Children on the tongue thrust correction programme I have developed, sing and bounce on body balls in time to the rhythm of their singing and reciting. This gives them experience which they may have missed.

Once at school, everyone should sing together at the beginning of each school day. Rote reciting of tables and poems is excellent exercise in developing rhythm, a vital ingredient in the development of voice and posture.

All children sing out of tune sometime, as they grow, because bones and teeth develop at different rates. But if a singing problem persists I would advise parents not to consult the music teacher. The music teacher is expert in music, not structural development. Take them for a dental or chiropractic check-up. If the dentist thinks your reasons are odd, change your dentist. Look for one who works regularly with a chiropractor or osteopath. There aren't many but there are a growing number. The Cranio Group can advise.

When computers enter the child's life, time should still be made to read aloud as a family. Everyone can benefit from telling stories, making up poems, reading aloud and singing together at least once a week.

As young voices develop and change, everyone should listen and be interested. Secondary schools which have music as an option should not allow singing to be an option. You cannot make a human characteristic an 'option' for development. Conversation and reading aloud should be maintained in the family through the teenage years (never neglecting poetry). And teeth should not be extracted for cosmetic reasons from anyone without a second opinion from an osteopath or chiropractor. Within a few months of putting such a plan into action the voices of the whole family would be working really well. Everyone would look better too, and smile more.

Practically impossible? The alternative is that the voice will deteriorate further and we can look forward to a society with even more back, postural, dental and voice problems and fewer of those mental capacities for which that frontal lobe is responsible - planning ahead and reasoning. It is the capacity to predict the outcome of our actions that makes us responsible for them.

I suggest we think about it; then go and have a good sing and think about it again...

***The Voice and Body Centre** is at 436 Winchester Road, Southampton S016 7DH (tel: 02380 390555). It can also provide information about the Cranio Group.*

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