Part two – Sensory Development in Neonatal Intensive Care Units

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Weighted blankets
A parent describes the difference a blanket made for her son

An Adult story
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Looking forward to the Annual Conference in September: Anita Bundy will be giving a day’s insight training around play preceding the Annual Conference, and if you have not as yet discovered the brilliant speakers who are going to be sharing their knowledge with us, make sure you read the Course Update and book early to avoid disappointment. It is a brilliant way to update your knowledge and hear so many experienced professionals on just one very well priced day. Look forward to seeing you in Birmingham for the Conference.

And a final reminder … please do tell us if Sensornet is meeting your needs as a member. Is there anything else that you would like to see?

Are you a budding article author with a topic awaiting publication? This is a publication that is for a wide audience and needs YOUR contribution as members from all professions and specialities to keep it fresh and inspiring for everyone. Please get in touch!

Happy Sensory Summer!

Alison Harris
Editor, SensorNet
Letter from the Chair

I would like to introduce myself as the new Chair of the SI Network.

I’m an Occupational Therapist working in Child Health who has been involved in the Sensory Integration in the UK since 1990. At that time, there were four SI groups covering the UK & Ireland offering different education packages. I was involved in the amalgamation of these groups out of which flowed the SI Network.

In the intervening years, the Network has gone from strength to strength.

Fifteen years on, this is my second term as Chair of the SI Network and I am delighted to observe how the Network has developed. We now train therapists through accredited courses with The University of Ulster and are working with Ulster to promote an MSc in SI. We also educate parents, teachers and other health professions via a range of non-accredited courses. Much of this progress was achieved under the Chairmanship of Sue Allen, our retiring chair. On behalf of the SI Network, I would like to express appreciation for all the energy and dedication she brought to the post. We wish her well on her relocation to Singapore.

An illustration of the development of the SI Network is that when I was first chair, we would meet around my kitchen table! In March this year, there were more than 30 people at our direction-setting meeting. This was an energetic event that set out strategies for running the Network over the next two years with our emphasis being on providing the best Sensory Integration Education.

We are now professionally supported by Fiona Insch, our Business Advisor, and Millrush, who provide our administrative support. However the SI Network is still heavily dependent on over 20 volunteers, all therapists. These volunteers make up the Board of Directors, the Education, PR & Admin and Research Committees, the editors of our publications, SensorNet & EmphaSIze and those who provide content to our media services via the web. These are the foundations for the success of the Network and we need a constant supply of ‘new blood’ to keep up the work. As ever we would welcome your involvement as a volunteer so don’t hesitate to contact the Network.

So it is an honour to be invited to again Chair such a worthwhile and successful organisation and here’s to taking forward the plans established at the direction setting meeting over the coming year.

Lindsay Hardy
SI Network Chairperson
Sensory development in the Neonatal Intensive Care Unit  

Part Two

Part One of this article considered the contribution the occupational therapists can offer to neonatal units and discusses the crucial role that sensory development has in preterm infant care.

Editor’s Note: If you missed part one of this fascinating article, you can access it on the SI Network Website. Click Here

Part 2 moves on to discuss the impact of vestibular input, taste and smell, auditory, vision and proprioception on the preterm infant.

Vestibular

The vestibular system is one of the first sensory systems to develop. By 20 weeks post gestation the vestibular nerve has reached its full-size shape and the other vestibular tracts have begun to myelinate. (Aubert, 2008)

Ayres (2005) describes how the vestibular system receives a constant sensory flow from the pull of gravity from early fetal life. She describes it as the unifying sense and states the vestibular receptors are the most sensitive of all sense organs. In the womb, the foetus is suspended in fluid and experiences motion whenever the mother moves.

This is in direct contrast to the preterm infants’ experiences in the NICU which can be sudden and unpredictable. Warren & Bond, (2010) emphasise the need to prepare the infant gently for position changes as their vestibular system is easily overloaded.

As the preterm infant grows, both Bader (2012) and Warren & Bond (2010) suggest introducing gentle rocking to those infants who can tolerate it. Bader (2012) stresses the importance of introducing only one sensory...
stimulation at a time and not rocking during kangaroo care or feeding.

Although it is evident from the literature that the vestibular system plays a huge role in development, Aubert, (2008) points out that there is currently little research on the implications of lack of vestibular input in the preterm infant.

**Taste and Smell**

The chemosensory system is one of the earliest emerging systems in fetal development, (Browne, 2008).

Taste buds begin to mature at 13 weeks post gestation when the foetus begins to suck and swallow. Aubert (2008) describes how taste buds are stimulated by the sucking and swallowing of amniotic fluid. The amniotic fluid is constantly changing due to the mothers’ varied diet.

Aubert (2008) goes on to describe how this experience is again in direct contrast to that of the preterm infant who is frequently tube fed and experiences the taste of noxious stimuli via rubber gloves, medications and reflux.

Smell is detected through the epithelium of the nasopharynx. It is known that preterm infants detect and discriminate odour and taste and prefer their own mother’s familiar odour and taste (Browne, 2008).

Warren & Bond (2010) stress the importance of making appropriate environmental adaptations to prevent the infant from experiencing noxious stimuli. They suggest limiting the use of alcohol wipes and not wearing perfume within the NICU.

Research shows that appropriate exposure to the mother’s amniotic fluid and breast milk will provide physiological and behavioural changes that can influence early attachment relationships and feeding outcomes (Browne, 2008).

This again highlights the benefits of skin-to-skin contact, provided during Kangaroo Care.

**Auditory**

By 24-weeks gestation the cochlea and peripheral sensory organs are formed (Aubert, 2008) and by 25 weeks the hearing apparatus is mature (Graven and Browne, 2008). The infant’s auditory system is now fully functional but cannot habituate.

The main occupation of the infant in the neonatal unit is to sleep. This will enable him to grow both his brain and his body. Management of the noise in the NICU is essential for two reasons: firstly to protect sleep as the infant cannot habituate and secondly to enable healthy auditory development.

The American Academy of Pediatrics recommends that all NICU’s be monitored for noise. A noise level exceeding 50 decibels would be a cause for concern.

It has been reported that dropping the head of the mattress within the incubator can reach peak intensity of 120 decibels, which is similar to that of a jet plane 30m overhead recorded at 140 decibels.

In utero, all sounds are conducted by fluid to the foetus, frequencies are low and quiet. This is in direct contrast to the environment of the NICU which can be very loud, due to medical equipment, objects being placed on the incubator and staff noise levels.

Graven & Browne (2008) report that continuous exposure to loud background noise in the NICU or home will interfere with auditory development.

Bowles (2012) highlights simple intervention strategies to reduce the noise in the NICU:
• Cover the isolette with a blanket as this has shown to effectively reduce sound that is transmitted to the infant.
• Respond to alarms within 30 seconds as they can create noise of up to 120 decibels.
• Conduct conversations away from the bedside.
• Minimise opening and closing of isolette doors.

Vision
The visual system differs from the other sensory systems as it is relatively underdeveloped at birth and matures rapidly in the first year of life. (Warren & Bond, 2010).

REM sleep is essential for development of the visual system, Graven & Browne (2008) report that sleep deprivation in early neonatal life causes significant interference with visual development resulting in visual loss.

The NICU can be a very bright place due to ward rounds and medical procedures. Warren and Bond (2010) recommended that ambient light levels within the nursery should be below 300 lux, ranging to 500 lux for measuring medication and 1000 lux for fine delicate medical procedures. After 37 weeks North West London Perinatal Network recommend babies are provided with visual experience appropriate for newborn development. Graven & Browne (2008) agree, stating that bright light may have a damaging effect on the development of the immature visual system.

A baby may appear overwhelmed by visual stimuli. It is therefore essential to watch for the infants behavioural cues and introduce visual input slowly. Highly contrasting black and white patterns are neither necessary nor suitable for the premature infant (Warren & Bond, 2010).

Brightly coloured toys and flashing lights are overstimulating and promote arousal rather than visual development (Glass 2002)

Term babies need sufficient light for their visual systems to develop effectively. The best toy for the newborn infant is the human face. Brazelton (1995) describes how the newborn will respond very differently to a human face compared to a nonhuman stimulus.

Proprioception
Faure & Richardson (2008) report that as the foetus moves around the confined space of the uterus it will receive a lot of proprioceptive feedback. As the limbs of the foetus stretch against the tight uterine wall it remains in a flexed posture with its extremities brought into midline.

Compare this to the neonate’s early life in the NICU. As gravity pulls down on the newborn they naturally fall into a flat extended posture. The flexed, tucked posture of the foetus is therefore lost.

Occupational Therapy is thus crucial, as the OT will spend a great deal of time working with both parents and neonatal staff to teach the 4 components of positioning: Containment, comfort, flexion and alignment (Bader, 2012).

This work helps to prevent postural deformities, enhance self-regulation and provide appropriate proprioceptive feedback.
The therapist uses positioning devices, towels and blankets to ensure postural alignment while also providing the infant with opportunities to self-regulate by bracing their feet against the boundaries and encouraging hand-to-mouth activity.

**Summary**

The brain and sensory systems of a foetus are designed to develop and grow in the womb which is a safe, warm, nurturing environment. This is in direct contrast to the bright, noisy and chaotic world that the premature infant emerges into.

As Occupational Therapists, we need to understand how the preterm infant’s sensory systems develop and what will support their healthy maturation. Occupational therapists need to ensure that the environment in which the preterm infant will spend a considerable length of time respects, supports and protects the premature infant’s sensory and neuro development.

As Smith et al (2011) state: “The preterm infant’s sensory experience in the nursery environment, including exposure to lights, high sound levels, and frequent noxious interventions, appears to exert deleterious effects on the immature brain and alter its subsequent development.”

It is therefore important that Occupational Therapy continues to play an active role in the neonatal unit.

We have one brain for life and those of us who are lucky enough to work in a NICU need to understand the huge role we play in protecting the developing brain of these infants. In effect we are the guardians of their sensory systems.

**References**

sensoryintegration.org.uk

Emily Hills is an Occupational Therapist and leads the OT-SI clinic at the Royal Free Hospital. She also works at Barnet Hospital and University College Hospital on their Neonatal units.
On 25th April, 2013, seventy five delegates gathered at Maple House Conference Centre in Birmingham to find out more about the SOS approach to feeding.

by Sheena Jones

The three day course was led by Kay Toomey (a paediatric psychologist) and Erin Ross (a neonatal paediatric speech pathologist), two exemplary practitioners with a wealth of knowledge and experience in relation to eating difficulties experienced by children.

The approach devised by Kay and Erin, focuses both on the needs of the child and the parents/caregivers with emphasis on true MDT working. There was reference to a robust and thorough evidence base throughout the course.

Within the introduction we were given an account of the prevalence of eating difficulties along with an outline of the main tenets of the SOS approach and a discussion of some of the myths around feeding, as identified by Kay and Erin.

The agenda then moved on to learning theory, oral milestones and neurosensory factors. We looked at the fundamental steps to eating and the developmental food continuum and cognitive and psychological developmental stages. Kay and Erin pointed out that the steps to feeding were an important part of the parental education that they always conduct as part of their eating programme. They stressed the need to include parents as integral members of the team and to offer them support and education, seeing them as part of the solution rather than part of a problem.

The third part of the program moved to intervention strategies and consideration of concepts such as ‘food jagging’ (eating the same food, prepared the same way at each meal or every day), before moving to principles of assessment and introduction to the SOS approach. We were introduced to concepts such as hard munchables, multiple solids and soft mechanical foods and participants eagerly joined in with the practical activities which involved sucking on cereals and chewing sweets and crackers!

Erin and Kay shared some innovative thoughts and ideas and reminded us of some key principles throughout the three days. These included:

• The essential tenet that children need the skills before they can eat successfully. Thus a key question to ask is does this child have the necessary skills to eat this food?
• Skill level needs to match the demands of the food.
• Practitioners dealing with complexity need support.
• Eating is one of the most demanding and potentially stressful activities of daily living. It involves eight senses.
• Effective communication is vital at all times within the assessment and intervention process.
• A global overview and detailed history are essential components when assessing and gathering information.
• Children with autistic spectrum disorders need special consideration and adaptation of approaches.
A therapist’s Feedback on Using the SOS Approach to Feeding

by Karen Holcombe

The three day course was led by Kay Toomey (a paediatric psychologist) and Erin Ross (a neonatal paediatric speech pathologist), two exemplary practitioners with a wealth of knowledge and experience in relation to eating difficulties experienced by children.

After a huge wait in anticipation, I finally managed to book on one of Dr Toomey’s courses and attended the SOS course in Kansas City in April 2012.

This was the first time the SOS course had been held in the UK & Ireland and comprised of the 3 day Basic course which was also run in Dublin, Ireland for 78 delegates. Delegates endorsed the request for the course to return in 2014 (July); the Basic course will be run again and there will be 2 further days of their Advanced workshops. The Advanced workshops can only be attended by those who have attended the Basic course; they cover areas such as 'Feeding the child of the Autism Spectrum', 'Working with Children with Severe Developmental Impairments', 'Parents as Partners' and 'Helping children transition off supplementary tube feedings'. A consistent message from the delegates was how important it would be to have key members of the MDT attend this course; it will be possible to have team members attend the Basic course next time, with 2013 delegates joining them returning for the advanced workshops of their choice.

Since returning to work, I have been busy setting up the first SOS feeding clinic in the UK and have been using the SOS approach to feeding with a number of children from 18 months to four years. It has been a real eye opener and we have seen significant improvements in the range of foods tolerated and tasted.

Being a private practice, at the Sensory Smart Child, we do have the luxury of working closely with families, schools and carers and although we regularly review progress, we are lucky enough to work with our children for much longer than many other establishments. We always feel privileged to be able to provide pure SI intervention under the guidance of the STAR centre and we are now even more excited about raising awareness of the SOS approach to feeding into the practice to meet the needs of even more children.

The most difficult aspect of implementing this programme has been ensuring you have access to all the skilled professionals that are essential in making this a safe working practice. We are lucky enough to have a multi-disciplinary team with Speech and Language Therapist and an excellent local paediatrician and have recently recruited a dietician to advise us on dietary implications.

There is a link between organic impairments e.g. GI problems, developmental delay and difficulties in eating. There is also a connection between eating and sensory integration.

It is necessary to approach children differently at different stages of development.

Parents respond to the difficulties being demonstrated by the children.

Education, education, education. If families don’t understand they cannot follow advice.

Children learn to eat by eating food not using tools!

Eating needs to be fun for young children.

It’s hard to be neat when you’re learning to eat!
It was exciting to hear Dr Toomey was coming over from the US to share her programme with us in Birmingham and Ireland and due to our plans to expand our feeding clinic this year, all my team attended. We all found the course incredibly useful and are all excited to be using the programme and reaching out to more children in need of specialist support with their feeding difficulties. Our new, designated feeding clinic room will be opening in July and we would love to hear from others who attended and share experiences.

A Parent’s View:
“We started my son on the SOS food therapy program when he was 15 months old and unable to eat any solid foods without gagging and becoming sick. Upon completing the initial 10 intensive sessions, we saw some improvement. Switching our feeding approach from child led weaning to the SOS program was not simple but the results have been dramatic.

Now 3 years old, our son no longer gags or becomes sick. He is able to eat a variety of foods and continues to make progress, especially in our regular therapy sessions. While our son still faces eating challenges, we are confident the continued support of the SOS feeding therapy will help him become comfortable and confident with his eating”.

Special Interest Groups around Feeding.

Special Interest Group for Occupational Therapists working with children with feeding difficulties.

This group runs twice a year for a full day to allow therapists from all over the UK to attend, focusing on both dysphagia and behavioural/problem feeding.

If you are an Occupational Therapist working in this field and would like to join us, please contact either – Katy Strudwick or Lisa Talbot.

The next meeting is 23rd September 2013 at St Thomas’ Hospital, London.

The London Paediatric Dysphagia Special Interest Group (PDSIG) for Speech and Language Therapist working in the field of eating and drinking difficulties in children, meets twice a year.

The PDSIG has produced a ‘Texture Guidelines’ booklet. It includes advice on swallowing safely; when and how one might advise on particular textures. It provides examples on categories such as ‘bite and dissolve’, ‘bite and melt’, ‘bite and splinter’ etc.

Contact www.pdsig.org
What a difference a day weighted blanket can make...

Jackie Rowntree, parent of William, Lincoln

Nearly three months ago, we received a recommendation to try a weighted blanket with our son who has always had severe sleep issues.

William is almost 10 years old. He has a rare genetic disorder called 'Double Duplication 7q11.23 Syndrome'. Some of the characteristics of the disorder are: moderate learning difficulties, ADHD, speech disorder, challenging behaviour, sensory issues and sleep problems. William’s sleep has always been extremely fragmented which has huge ongoing impact on our family. He has a very good bedtime routine and calming down time, and would go up to bed about 7.30pm. However, he would then be very vocal until he fell asleep between 10-11pm. He would then wake about 2am, for an hour or two, and then again by 5am for the day. However, if he woke after 3am, this would be him up for the day!

Over the years, following medical advice - we have tried different kinds of medication for sleeping, and even been sent for William to have sleep studies to determine whether he was suffering from any kind of seizure affecting his sleep. Nothing worked. In the end, we even moved house, to try and have William in a bedroom further away from his sibling, so to stop him disturbing her.

About 3 months ago, I had a conversation with an occupational therapist that I work with. She was asking how the sleep study had gone and whether it had helped. She asked had we ever tried to use a weighted blanket. Over the years, I had dealings with weighted blankets, through my work. I had even changed William’s duvet to a double after noticing the heavier it was, the better he slept. But for some reason, never thought of trying a weighted blanket. Over the years, I had dealings with weighted blankets, through my work. I had even changed William’s duvet to a double after noticing the heavier it was, the better he slept. But for some reason, never thought of trying a weighted blanket.

Anyway I decided, anything was worth a try. We were loaned a blanket to try and it was suggested that it was put on over his duvet and to be sure that he was happy to use it. William responded it to it from the first night we tried it. I was surprised that it was not particularly heavy but it had a profound effect on the way William settled to go to sleep. Three months on and I’m still amazed at the results. William goes to bed as usual, although he still takes a few hours to settle, which isn’t surprising considering his ADHD. He will fall asleep by 10pm and sleep fully until between 5-7am. I know he still isn’t getting enough sleep, but compared to before, this is fantastic.

I have spoken to William about the blanket and how it makes him feel. He said it makes him feel ‘cosy, sleepy and safe.’ He said if anything, he would like it slightly heavier. The blanket now goes everywhere William sleeps – on holidays, overnight stays with grandparents etc. This is just brilliant, I am very grateful that finally we can get a few hours of uninterrupted sleep.
There is limited research relating to the use of weighted blankets and the results are not conclusive about the positive effects of use. There are also safety issues related to their inappropriate use by untrained staff in response to a tragic death in Canada in 2008.

This led to the College of Occupational Therapy producing Guidelines for the safe use of weighted equipment by Occupational Therapists as part of their therapeutic intervention with a client, and includes guidelines/suggestions for safe and responsible use by others.

This is available online to members of the British Association of Occupational Therapy. Mullen et al (2008) researched safety of use of weighted blankets with 32 adults. The results concluded that their use was safe.

It is important to distinguish between sensory integration treatment which requires active participation by the individual in order to bring about adaptive change and the use of a weighted blanket which is a passive intervention and is linked to the effect of deep pressure on arousal (Lane 2002). However, the use of a weighted blanket can be part of a treatment plan, used as part of a sensory diet, self soothe strategy or be used within a sensory integration treatment session along with active movement.

Although there is no finite research evidence to explain the neurological response to using a weighted blanket, there is extensive individual feedback that weighted blankets and weighted resources can help the individual in calming and assisting with regulation.

Weighted resources tend to be expensive and it can be advantageous to loan items where possible so that individuals can try before they buy. It can also mean that parents or carers have guidance about what to use and how to identify the type or weight to use appropriate to the individual rather than being left to make these choices without advice. The advised ratio for weight is for the equipment not to exceed between 5-10% of the individual’s weight. This is unlikely to be exceeded with older children, but is important to ensure with the younger child. Sensible, common sense precautions are required – not to cover the face or head and to be sure that the person can remove it independently if they choose to do so.

Within these criteria, weighted equipment can be a useful strategy to try and has few contraindications. For a child or adult who has poor sleep and finds it difficult to settle, for an anxious individual, weighted resources can provide a calming positive effect on their ability to regulate themselves. As therapists we should not forget this simple and often highly effective strategy!

NB. Some individuals have poor temperature regulation and this can be a sensory processing issue and it can in some cases be related to their medical condition or medication. Individual consideration of these issues must be taken when evaluating whether to advise the use of weighted equipment. This can include consultation with their appropriate medical consultant.

References:

Alison Harris
In the past I have led a relatively reclusive life owing to poor social and other life skills. While I can function in a work environment it is with great difficulty.

I have tended to either be self-employed or employed in a capacity where I work on my own — because I used to find being in a busy commercial or social environment stressful. In the past, I have had a tendency to make mistakes, struggle with organizing myself and being misunderstood.

Six years ago while interviewing someone in my job as a Field Social Research Interviewer, the person I was interviewing could see I was struggling to use the computer programme. The interviewee was a special needs college assessor, who suggested I might, like her, have dyspraxia and she had recognized some of the symptoms.

This stayed with me and several years later, after becoming unemployed, I attended a free workshop for helping people to get back to work. I struggled with a sequencing activity during a Back to Work workshop exercise and wondered whether dyspraxia was the issue. I had just read a wonderful book called ‘Living With Dyspraxia’ by Mary Colley which included a self-diagnosis which showed that it was very likely that I did have dyspraxia.

After being referred to a social worker we explored the extreme difficulties I had had since my early years and all though school with poor co-ordination and sensory sensitivity. The social worker, instinctively picked up that I had had difficulties socialising in school (I now know this is partly because I had had difficulty ‘joining in’ with games), and I realised as we talked that during my childhood I had few close friends (though not through choice), as others of my age tended to draw away from me. Although at the time I didn’t understand why: I now see that I had a tendency to overcompensate for mistakes, for example when not understanding the rules of the game, I would overcompensate and then come across as stupid.

So I adopted an ‘I Don’t Care!’, almost laissez-faire personality, and would ‘stand on the side lines’ in the playground. I also now believe that my father had Sensory Integration issues (he was very shy, had few close friends and had difficulties showing emotion despite being extremely adept at writing). I now know that dyspraxia and the associated sensory processing issues can run in families, affecting boys in particular. Nowadays dyspraxia is routinely picked up in school children at an early age when it is much easier to treat. Although more work is being done now...
with adults, it would have been invaluable to have intervention to address my sensory processing difficulties earlier in my life.

Funding was approved for me to have an assessment for dyspraxia with an occupational therapist who used Sensory Integration Therapy to assess me and then worked with me using sensory integration one to one, to improve my social interaction and work skills.

To start to test out and use my new found work and social skills I am now working as a volunteer for a charity bookshop and I am slowly gaining confidence with operating the till and dealing with the public. I really enjoy this now, but would not have been able to attempt any of this in the past.

As an adult, I can look back on my life and see how the dyspraxia has affected my motor skills e.g. handwriting, as well as social and practical skills and the extent it has affected my life. I had a fear of making mistakes, which used to be so common, that I got to a point where I had a tendency to 'catastrophise'. I felt I was stupid and inadequate. In actual fact I have an above average IQ, I have an Hons. Degree, and I am good at creative writing. In my own way, I am quite capable, but until now I have found it very difficult to 'fit in'. I am now clear that my problems with planning, organising and sequencing my actions has affected both my social and work life to a significant degree.

For me, the point is that I am now starting to do the things in life that I want to do. I am no longer held back by a fear of making mistakes - which in the past had such a detrimental affect on my early development. I withdrew in to myself as the condition wasn’t recognized in those days. Sensory Integration Therapy has enabled me to understand my hidden disability and I am now well on the way to leading the life I want to lead – I am a trainee counsellor.

BB
Parent’s corner

Sensory Recipe – Jolly Jelly Lolly

by Kath Smith

You will need:

A packet of jelly powder or jelly cubes
Yogurt/Fromage Frais/Custard/Crème Fraiche or Fruit Juice/Smoothie (equivalent amount to the cold water on the jelly packet as it will replace the cold water requirement in your jelly packet recipe.)

NB: Never use pineapple or pineapple juice – it prevents jelly from setting, even vegetarian gelatin.

Optional:
Fruit/vegetable pieces (from finely grated to chopped depending on the individual’s ability to eat bits or swallow safely).

As an OT who grew up and trained in South Africa, one of my paediatric student clinical placements with children with disabilities was not far from an ice cream factory shop for the company Gatti who made a great ice-lolly called a Jolly Jelly. A firm favourite in this and other special schools, including Tswellang in Mangaung, Bloemfontain where I later worked once I qualified as an OT.

This lolly was like a jelly. It did not melt quickly and it did not drip. When bitten into, the lolly had substance and gave lots of oral feedback.

While working here in the UK with children in Cornwall, I tried to find a similar product. When I couldn’t, I researched and trialled a few recipes until we hit on this alternative.
Method:

Melt or dissolve the jelly in the minimum hot water recommended. Stand or whisk to cool.

Once cool, add either your choice of yoghurt/fromage frais or fruit juice etc in the same quantity as cold water in jelly packet recipe.

Mix well and pour into ice-lolly moulds or ice cube trays, adding any fruit/vegetable first. Wiggle and gently shake the moulds or tray to get rid of air.

Set in a fridge first and once firmly set, transfer to the freezer and freeze the already set jelly.

Dipping the moulds/tray in hot water for a few seconds will release the jelly lollies or ice tray shapes. Enjoy!

NB. Remember never to leave a child who has feeding difficulties alone to eat, and take appropriate precautions with any child around food and choking hazards.

Advantages:

- Not so drippy, so easier for those who eat more slowly and lasts longer!
- Lack of drips and messiness is an easier way to introduce ice-cream/ice lollies children with poor oral and tongue control – with opportunity to build on and improve this.
- Lack of drips and face mess is easier for those with sensory sensitivity on the face, hands and around the mouth
- Jelly texture gives more oral feedback than traditional ice cream or ice lolly
- A great way to initially dull healthy tastes of fruit and yoghurt for fussy eaters when trying to introduce new fruits, textures and flavours
- Fun to make with older children.
The following research articles have been selected as a range of recent work that would be useful for the clinician to be aware of. Click on the pushpoints to go to the website page of abstracts for more information and references.

**Sensory processing related research**

**Intrinsic and extrinsic influences on children’s acceptance of new foods**  
*Physiology & Behavior, February 2013*  
Jackie Blissett & Anna Fogel

**Is Idiopathic Toe Walking Really Idiopathic? The Motor Skills and Sensory Processing Abilities Associated With Idiopathic Toe Walking Gait**  
*Journal of Child Neurology, January 24, 2013*  
Cylie M. Williams, Paul Tinley, Michael Curtin, Suzanne Wakefield, Sharon Nielsen, Cardinia Casey, Charles Sturt

**Children born prematurely have atypical Sensory Profiles**  
*Journal of Perinatology, 14 February 2013*  
A C Wickremasinghe, E E Rogers, B C Johnson, A Shen, A J Barkovich and E J Marco

**Neuroscience research**

**Subcortical, Modality-Specific Pathways Contribute to Multisensory Processing in Humans**  
R. L. van den Brink, M. X. Cohen, E. van der Burg, D. Talsma, M. E. Vissers, H. A. Slagter

**Effects of Parietal TMS on Visual and Auditory Processing at the Primary Cortical Level – A Concurrent TMS-fMRI Study**  
Joana Leitão, Axel Thielscher, Sebastian Werner Rolf Pohmann Uta Noppeney

**Sensory processing research relating to Autistic Spectrum Disorders**

**Anxiety, Sensory Over-Responsivity, and Gastrointestinal Problems in Children with Autism Spectrum Disorders**  
*Journal of Abnormal Child Psychology, January 2013, Volume 41, Issue 1, pp 165-176*  
Micah O. Mazurek, Roma A. Vasa, Stephen M. Kanne, Daniel Rosenberg, Amy Keefer, Donna S. Murray, Brian Freedman, Lea Ann Lowery

**The Association Between Therapeutic Horseback Riding and the Social Communication and Sensory Reactions of Children with Autism**  
*Journal of Autism and Developmental Disorders, February 2013,* Sandra C. Ward, Kelly Whalon, Katrina Rusnak, Kimberly Wendell, Nancy Paschall

**Understanding the sensory experiences of young people with autism spectrum disorder:**  
A preliminary investigation  
*Australian Occupational Therapy Journal, Volume 60, Issue 2*  
Jill Ashburner Laura Bennett, Sylvia Rodger, Jenny Ziviani

**Use of Social Stories to Improve Self-Regulation in Children with Autism Spectrum Disorders**  
*Physical & Occupational Therapy in Pediatrics, feb 2013.*  
R Thompson & S Johnston

**Attentional shifts between audition and vision in Autism Spectrum Disorders**  
*Research in Autism Spectrum Disorders, Volume 7, Issue 4, April 2013, Pages 517–525*  
Valeria Occelli, Gianluca Esposito, Paola Venuiti, Giuseppe Maurizio Arduino, Massimiliano Zampini
Editor's note:
It is exciting that there are increasing numbers of therapists going through the Sensory Integration modular training with the University of Ulster. In response to many questions being asked about what happens after SI 4, Sarah Wink, Occupational Therapist, explains what the two research modules comprise:

There are two research modules which are a requirement to progress towards the MSc in Sensory Integration following completion of modules 1, 2/3 and 4. These modules are ‘Research Evidence in Health Science (OTH 814) and ‘Preparation for Health Sciences Research (OTH 812).

Both modules are completed online and content is delivered via Blackboard Learn. This involves screencast lectures and materials supported by weekly online tutorial sessions.

The first research module (OTH 814) assignment involves completing a systematic review of literature relevant to your area of clinical practice. You will be expected to identify, access and critically review published articles relevant to a review question of your choice. This largely involves independent learning and work, although you will be allocated an advisor who will guide you on the development of your question and review of the literature. The module builds on your understanding of healthcare theory and research by developing skills in reviewing and synthesising the literature with a view to advancing clinical practice.

The second research module (OTH 812) aims to assist you to develop skills in clinical research design and planning in preparation for the Masters project. Specifically, this will include; developing your research question; designing your clinical research study; considering ethical issues and reflecting on the implications of the proposed investigation for advancing practice. The module will be assessed through the submission of a research proposal in the area of your choice.

For more information contact Greg Kelly, Course Director.
Tribute to Jane Koomar
Ph.D. OTR/L, FAOTA
(June 29, 1954 - Feb 24, 2013)

by Susanne Smith Roley
OTD, OTR/L, FAOTA

It is with a heavy heart that I find just as I begin to write this tribute, two bombs have exploded at the finish line of the Boston marathon. The Boston area was Dr. Jane Koomar’s chosen home.

S he lived there for more than 3 decades, opening two clinics, OTA-Watertown (recently relocated and renamed as The Koomar Center) and OTA-Wakefield; started a non-profit for education and research, The Spiral Foundation; taught for at least two different universities, Boston University and Tufts University; networked with various professionals; and consulted in numerous school districts in and around Boston and Cambridge.

There is no doubt that Jane would be heartbroken with this news, but I also have no doubt Jane would have immediately activated her recent work combining innovative interventions for self-regulation using sensory integration theory and methods together with psychotherapy and collaborative care for individuals who have experienced trauma and disrupted attachment. It was her hope to extend this work to all who needed it.

Jane cared deeply about people and seemed to get along with everyone, a true feat among the mix of high-powered and opinionated professionals. She cared about her family – her husband, John and her children, Amy and Matthew, who she loved more than anything else in the world; her friends, her community, her profession, and the well-being of children and families. She made time to listen and to be present for them. Her caring extended to her never-ending quest for interventions to improve the lives of individuals. She was an academic and a researcher, but first and foremost a practitioner, engaged in creating possibilities for improving therapy practices in her own clinic and mentoring therapists from around the world to do the same.

She began as all young Occupational Therapists do, finding her way through life, making decisions on who she would become and where she should place her energies. Ginny Scardina MA, OTR/L, FAOTA, was one of her first mentors, and soon Jane was teaching in Ginny’s training program affiliated with the Cincinnati Public Schools in Ohio. Together, we worked with other ‘Ginny’s OT kids’ that included Dr. Shelly Lane, Dr. Mary Schneider, Dr. Charlotte Brasic-Royeen, Joan Dostal, and others who had been attracted...
by Ginny’s enthusiasm and seemingly unending energy for promoting sensory integration and occupational therapy. Ginny encouraged all of us to pursue advanced degrees and Jane was one of the first of our cohort to do so.

On Jane’s admission to Boston University, Boston became her home. At BU, Dr. Sharon Cermak was one of her primary mentors and soon she was collaborating with other brilliant occupational therapists such as Dr. Ann Fisher and Dr. Anita Bundy, also at BU. During that time she wrote one of the first chapters on sensory integration intervention outside of Ayres’ work, in the eminent Fisher, Bundy, and Murray’s *Sensory Integration Theory and Practice*. She was one of the first to develop courses to teach sensory integration intervention strategies, working with Susan Young and Dr. Erna Blanche to develop the courses through Sensory Integration International and later a contributor to the Sensory Integration Intervention course through USC/WPS. She created an intensive course of study on sensory integration intervention methods at OTA-Watertown, training hundreds of therapists from around the world.

Jane moved to California briefly to study with Dr. A. Jean Ayres during the 4-month clinical training program. Her video footage of ‘Jean and Ray’ taken during that time is some of the only existing video of Dr. Ayres treating in her clinic. Jane’s doctoral studies brought her into psychology and she studied gravitational insecurity and temperament, combining two important perspectives on children’s anxiety. Following Ginny’s lead, she chaired the Sensory Integration Special Interest Section of AOTA and later served on the Mental Health Special Interest Section. She continued investigating areas of interest through the Spiral Foundation and was a founding member of the Sensory Integration Research Collaborative (SIRC). She made substantial contributions to the Ayres Sensory Integration® Fidelity Measure and other efforts resulting in several AJOT publications. She was the recipient of numerous awards, perhaps most notably, the Virginia Scardina Award of Excellence and the A. Jean Ayres Award.

Dr. Jane Koomar, my dear, beloved friend and colleague, left an important legacy to those of us who knew her and to therapists around the world using sensory integration intervention strategies in practice. I am sure that Jane had numerous additional accomplishments that I have omitted, but there is no way to say it all. Jane’s kindness and dedication is an inspiration to all. She was loved by all who knew her and will be sorely missed.
**Course updates**

**Annual Conference, Saturday**

21st September 2013:

Keynote Speech – Professor Anita Bundy, Sydney, Australia. Sensory Integration: What's the evidence?

Dr. Helen Lynch - Sensory integration as a play-based approach-typical play development & sensory rich environments

Dr. Suzanne Smith Roley - presentation title to be confirmed.

Professor Bundy will be presenting a pre-conference workshop on Friday 20th September on Play.

**Stop press!!**

Intervention courses to link with the SI Module 4 Advanced Practitioner course are being developed in 2013 - 2014. Details will be advertised on the website.

**Play in Occupational Therapy: What is it? What use is it**

– with Professor Anita Bundy

20th September 2013

In this one day interactive workshop, we will examine play as a medium for, and an outcome of intervention. We will pay particular attention to defining, assessing and promoting play.

Book this course with the Annual Conference and save.
This book is split into distinct sections:

The initial part of the book describes the OT process including assessment (and use of standardized and non-standardized tests) with examples of assessments with a recap on what they measure, and what observations OT clinicians should be making. The text then moves onto intervention and takes us comprehensively through the intervention process, and outcome measurement. It refers you back to the need to consider functional problems and challenges in occupational performance and reminds us that although we may identify difficulties in sensory processing, what we seek is to improve occupational engagement.

The importance of understanding the relationship between motor performance and sensory function is emphasized, and the text recommends that OT assessment should include consideration of sensory processing if the history and investigations suggest that dysfunction may be present. At every step the text refers to the evidence and research base with reference to the levels of research articles as well as comments on their conclusions, quality and effectiveness. Areas where the evidence is weak are highlighted.

Explanation of the meaning of the levels is given later in the book.

The second section focuses on intervention and separately considers OT using a Sensory Integration approach, a sensory-based intervention (where the importance of sensory input is considered but the principles of OT-SI are not adhered to), and other interventions (such as perceptual motor). Case studies are used to illustrate principles of evaluation and intervention and some useful checklists are included that may assist with clinical decision-making.

Experienced paediatric Occupational Therapists may not learn anything new from these sections but they would be useful in helping develop skills in less experienced therapists and perhaps serving more experienced therapists as a reminder of all we can and do assess.

The third section of the book provides a useful précis of reviews of the evidence in the form of tables that details study objectives, the level of research achieved, the results and the limitations.

Five areas are considered:

• The effectiveness of Sensory based approaches in OT
• Summary of the evidence supporting sub types of children with SI dysfunction
• Functional performance difficulties for children with SI dysfunction
• Effectiveness of OT interventions using an SI approach
• Effectiveness of OT interventions not using a SI approach.

In my opinion, this summary of research would be invaluable to those who do not work within the research field and who find it challenging to locate the correct studies to support our clinical arguments.

A final section provides resources to help make occupational profiles and a glossary of terms. These can be found within other similar texts but are a useful resource for clinicians who do not already have them.

Overall, this text is a highly recommended for both newer and more experienced clinicians, service managers and commissioners, as it provides great insight into the OT domain and evidence base for different approaches to intervention for children and adolescents with sensory processing difficulties.

Available at our online shop:
Sheila Frick, OTR, will present this two-day workshop. You will learn to use Therapeutic Listening® Modulated music to create individualised, home-based programs for clients and how to implement Therapeutic Listening strategies in conjunction with postural, respiratory, and sensory activities.

Cost £395

Advanced Therapeutic Listening - 5th – 6th June 2013

Advanced Therapeutic Listening builds upon Therapeutic Listening, presenting a variety of advanced sound tools for use in treatment sessions, home programs and sensory diets. This course also introduces new sound tools for use in developing listening “tune-ups” and enhancing individualised listening programs.

This course is suitable for therapists with Therapeutic Listening training.

Cost: £395

Both Events: £750

To book your place and for more information visit:
www.leapchildrenstherapy.com
Email: Anna Roberts, CSH at anna.roberts4@nhs.net
Telephone: 01372 735735x6134 or 07879644069

Venue: Antoinette Hotel, Wimbledon.
http://www.antoinettehotel.com