

Sensory Science

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Aloha – For Caring for People with Dementia

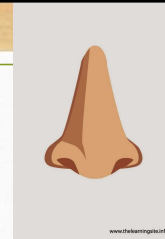
- Ask
- Listen
- Observe
- Help
- Ask Again



The Power of Senses and Dementia

- July 2, 2016 the online journal Dementia Today (<http://www.dementiatoday.com/use-senses/>) Reported on the ways in which engaging the five sense can help a person with dementia communicate.
- It stated, “Loved ones might not remember how to bake their famous cookies, but when presented with a lump of dough, it might be surprising at how quickly they start rolling it out, just like they used to. Muscles tend to remember things the mind has forgotten.”

Smelly Facts



- 1. A study published in *Journal Science*, showed that the nose can smell at least one trillion distinct scents.
- 2. How does smell happen? When odors enter the nose, they travel to the top of the nasal cavity to the olfactory cleft where the nerves for smell are located, explains [Amber Luong, MD, PhD](#), assistant professor at the University of Texas Health Science Center at Houston. “There, the odorant is detected by various receptors located on the nerve cells and the combination of activated nerves travel to the brain. The combination of activated nerves generates all the unique smells that we as humans can detect.”
- 3. Some of the most pleasant or pleasurable scents include vanilla, some forms of orange scents, cinnamon, crayons, and cookies, according to Luong and [Dolores Malaspina, MD, MSPH](#), professor of clinical psychiatry at Columbia University in New York.



More Fun Facts

- 4. Smell is the oldest sense. Chemodetection — detecting chemicals related to smell or taste — is the most ancient sense, says Malaspina. “Even a single cell animal has ways to detect the chemical composition of the environment,” she adds.
- 5. Women have a better sense of smell than men. “Women always are better at odor and smell identification than men, and every study finds that,” says Malaspina. She says one of the reasons for this may be that women have a more developed orbital prefrontal region of the brain. It may have also evolved from an ability to discern the best possible mates, or to help women better bond with and understand newborns.
- Like fingerprints, every person has their own distinct odor.

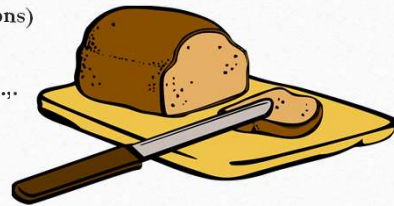
The Sense of Smell



- Here are some helpful ideas for creative engagement for seniors battling dementia.
- Cooking or baking can evoke so many memories and the activity opportunities are endless. Here are a few ideas that will help get started planning a fun, flavor-filled experience for seniors with dementia:
- Prepare a chocolate tasting
- Sample different flavors of tea

Activities with Smell – Bread in a Bag

- 1 Two-gallon, heavy-duty freezer bag and 1 Twist tie
- 1 Quart-size plastic bag with 2 cups of all-purpose flour
- 1 Quart-size plastic bag with 2 cups of whole wheat flour.
- Two teaspoons of salt in a disposable container, such as a sandwich bag, small paper/plastic cup
- One package active dry yeast or fast-rise yeast (2 1/4 teaspoons)
- Two tablespoons sugar in small disposable cup or bag
- One tablespoon of vegetable oil, in small disposable cup, etc.,.
- 3 Disposable mini-loaf pan, 5 x 3 inches



Mix in a heavy-duty (freezer) plastic bag:

½ cup all-purpose flour; 1 package active dry yeast or fast-rise yeast

1 tablespoon sugar; ½ cup warm water (105° to 115°F)

Close bag, release air and work with fingers until completely blended. Let rest 15 minutes.

Open the bag and add:

1 tablespoon sugar

2 cups whole wheat flour

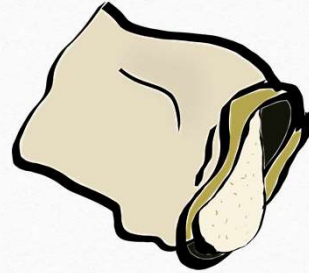
1 tablespoon vegetable oil

2 teaspoons salt

1 cup all-purpose flour

¾ cup warm water (105° to 115°F)

Mix for about 5 minutes until the bread pulls away from the sides of the bag.



Turn dough out onto a lightly floured surface and knead 5 to 6 minutes. Knead in just enough flour to make a soft dough; it should be a little sticky. If too much flour is added, the final product will be dry and low-volume. Divide dough into thirds. Cover with plastic bag. Let rest 10 minutes.

Press the dough out flat with fingertips into a 4 x 6-inch rectangle. Beginning at a short end, roll the rectangle up tightly like a sleeping bag. With fingertips, pinch the edge to the rest of the dough forming a seam. Fold over the two ends and pinch.

Place dough, seam-side down, in pan. Cover with bag and let rise until doubled, about 45 to 60 minutes. Bake in a preheated 350°F to 375°F convection oven 15 to 18 minutes; or in a 400F conventional oven for 30 to 35 minutes.



Activities with Smell



- Try tasting familiar holiday treats (candy corn, candy canes, peeps, Hersey's kisses, etc.)
- Taste different flavors of ice cream
- Dip pretzels in various sauces (honey-mustard, spicy-ranch, BBQ sauce, etc.)
- Prepare a fruit salad together and steal bites
- String cranberries or popcorn for an outdoor Christmas tree
- Clean out a pumpkin, roast the seeds, and have fun carving
- Food can bring people together, as many experiences revolve around meals: holidays, birthdays, church potlucks, summer barbecues, weddings, etc. This activity is so much more than just the tasting; it is about the stories, laughter and fun shared along the way.



Tactile Science - The Power of Touch

- The Alzheimer's Living in Reverse website reported people with dementia lose a lot of their senses such as the sense of touch much less than it used to be, hearing declines due to aging and some develop neuropathy or decreased circulation of their extremities causing a lack of feeling.
- However, science has also found the sense of touch is critical to human wellbeing and helps residents with dementia improve concentration and relaxation.
- Everyone has a sense of curiosity and likes the feeling of accomplishment.



Sensory Box & Gel Pack Activities

- Scientific fact: The nerve endings in our skin turn pressure and temperature into sensations we feel because our brains translates environmental stimulation into sensation. Thus providing sensory stimulation provides brain stimulation.
- Activity - Make a sensory box. Fill plastic shoebox with rise and everyday objects from rocks to seashells and cups to squeeze balls.
- Activity - Gel packs – Fill a Ziploc bag with hand sanitizer, pebbles and glitter. Place inside a second Ziploc. Residents will feel, squeeze and watch the pebbles move inside the bag.

Transitional Objects Activity



- Dr. Donald Winnicott coined the term in 1951 to refer to any object, usually a soft plush toy, which a person regards as particularly special to them. Winnicott identified that having 'transition' or comfort objects through our adulthood, with not just soft toys but also photos, souvenirs and other items which we warmly associate with happy times, places and relationships.
- Handbag Circle Activity – Collect handbags from garage sales etc. Fill them with keys, tissues, a change purse, lipstick etc. Seat residents in a circle and let them pass around the bags and reminisce about trips, shopping, church etc.

Comfort Items Benefits



People with sundowning syndrome need comforting through the familiar objects of their everyday life. Bring cherished items such as blankets or family photos to the new facility to help ease the transition and curb symptoms, according to Healthline.org published July 2016.

- Visitors should bring photo albums but never quiz the person with dementia.
[I'm Still Here: A New Philosophy of Alzheimer's Care](#)
- Dec 29, 2009 by [John Zeisel](#)

Comfort or transitional objects represent:

- Emotional memories
- Something specific about the item
- When it was given to them
- Who gave it
- What traumas and joys it's seen the owner through
- What it reminds them of eg a soft toy dog or cat which brings happy thoughts of patient's pet.



Benefits of comfort/transitional objects:



- They can provide a springboard for conversation, including in therapy
- Staff can use them proactively, e.g. including the comfort object when a resident is very distressed or disoriented
- They can help prepare the patient for sleep (eg as part of a getting to sleep ritual)
- They can help staff and carers orientate within the person's framework of who they now are
- They're soothing, reassuring, supportive, uplifting, consoling, reliable, constant, permanent (unless lost...)

Comfort Item Research



- Dr. Anna Madill of the University of Leeds and Jenny Arthern, psychological therapist at Wakefield and Pontefract Community Health, studied the benefits of “transitional objects”. A transitional object could be anything that was used in lieu of a human relationship.
- “Comfort items tap into the inner child, a way of seeking strength in yourself,” Arthern said.
- “It isn’t immature, it’s sensible. The ability to derive comfort from an inanimate object dates from an early developmental stage.
- “Little children learn that an object still exists even when they can’t see it. So they don’t feel abandoned when their parents aren’t in the room. It’s about self-reliance. We’re alone but we imagine we’re not.”

Twiddle Mitts



- Bournemouth University in England third year students are making 'twiddle mitts' for patients living with dementia at The Royal Bournemouth and Christchurch Hospitals NHS Foundation Trust (RBCH).
- 'Twiddle mitts' are knitted mittens or hand warmers with beads, buttons and objects sewn on to them. The mitts are becoming popular gifts for those living with dementia, as having something to 'twiddle' helps to calm agitation and restlessness – both common symptoms of the condition.
- Michele Miles, student nurse, said: "I found out about twiddle mitts can vastly improve the mood of people living with dementia."
- Rachael Davies, RBCH dementia nurse specialist, said: "It's been shown the twiddle mitts can really reduce stress levels for patients with cognitive difficulties."

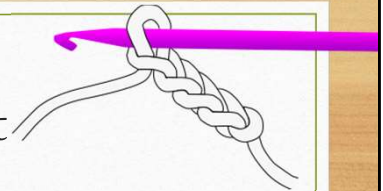
Knit a Twiddle Mitt



Needles: 8mm circular, (I preferred to use 6.5mm straight needles).

- Directions Cuff: Cast on 40 stitches using 2 strands of double knitting wool, (you can also use 1 strand of chunky wool). Work in stocking stitch (knit a line pearl a line) for 11 inches.
- Muff Body: Continuing with stocking stitch and using up oddments of various textures of wool ie: chunky, mohair, ribbon.
- Until work measures 23 inches.

Crochet a Twiddle Mitt



- J – hook.
- Chain 40 then turn, chain up three and double crochet to the end of the row.
- Continue for 14 rows.
- Attach the side together with a chain stitch.
- Turn inside out and attach ribbon, shoelaces, crocheted chain, tassels, keys, twine etc.



Playing in Sand Benefits

- Kinetic sand is made up of 98% pure sand and 2% polydimethylsiloxane – a chemical used in beauty products.
- Occupational therapists have found multiple benefits for kinetic sand:
 - 1) Improve fine motor skills
 - 2) Provides sensory processing for those who like to touch everything
 - 3) Encourages creative thinking by allowing users to make new shapes
- Activity – Feel and compare real sand to kinetic sand.

More Benefits



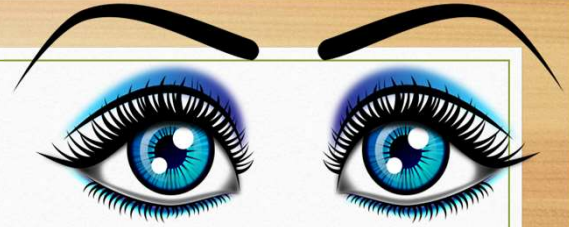
- 4) Deep pressure can help the brain organize. Thus squeezing the sand can help residents focus.
- 5) The process of running hands through the sand has been demonstrated to promote a sense of calm in the user. This can be used during times of high stress levels, such as sun downing, to help the resident relax.
- 6) Improve language skills. It has been shown that engaging residents with the sand play and making eye contact can improve communication.

Make Natural Kinetic Sand



- Materials: Two cups of brown sugar; two cups of corn starch; ten tablespoons of vegetable oil. Mix together and store in air tight plastic container. It will last about three weeks.
- Why this works. In regular sand, air particles between the grains keep the sand from clumping together. When you add a small amount of water, the water particles replace the air particles and the sand clumps. If you add too much water, the water pushes the sand particles too far apart and it will not clump together.
- This sand recipe allows brown sugar and corn starch to take the place of the sand and oil to take the place of water and thus allows the material to clump like wet sand, but is edible.

Sight



A 2011 Australia study: **Light And Lighting Design For People With Dementia** found that as we age the thickening and yellowing of our eye lens changes how we see color. E.g. Red becomes pink and creating contrast, such as white plates and black placemats make it easier to eat.

Color also affects mood. They also found:

Blues are generally noted to have a calming and restful effect.

Green reduces central nervous system activity and helps people feel calm.

Red increases brain wave activity and can stimulate the production of adrenalin into the blood stream.

Activity: Use red in the morning and blues and greens in the afternoon.

Activity - Contrasting colors – Dye rice and let residents mix colors.

Sensory Bottle



- Materials: soda bottle, rice, small items such a dice, key chains, coins, bobbie pins.
- Fill the bottle and secure the lid with super glue.
- Tape a list of objects to the outside of the bottle (optional).
- Residents spin the bottle to look for objects.

Universe in a Bottle



- Materials: Plastic bottle, clear corn syrup, glitter, boiling water, glow in the dark stars, blue food coloring.
- Process: Fill the bottle 1/2 full of hot water, add corn syrup (pour into the center of the water so it does not touch the sides of the bottle), add stars, glitter and one drop of blue food coloring.
- Secure the lid with packing tape – super glue will not hold.
- Shake and enjoy.

Viewing Nature

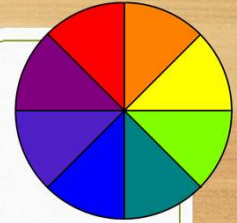


- Research backs up the belief that spending time with nature can decrease feelings of depression, and increase self-esteem.

A 2009 study from the *University of Rochester* found that when study participants were exposed to pictures of [nature](#), they were more likely to list connectedness and community higher as life aspirations than wealth and fame than when the participants were exposed to urban pictures

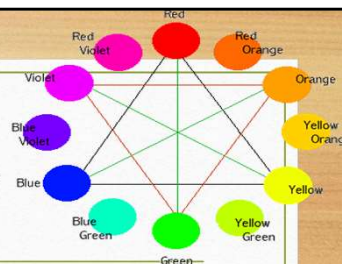
- http://www.naturalnews.com/037693_nature_deficiency_mental_health_benefits.html#ixzz4DH2wcfCT

Visual Activity - Chromatography



- Chromatography means "color writing" and comes from the Greek words chroma and graphe.
- Chromatography is actually a way of separating out a mixture of chemicals, which are in gas or liquid form, by letting them creep slowly past another substance, which is typically a liquid or solid. So, with the ink and cloth trick for example, we have a liquid (the ink) dissolved in rubbing alcohol creeping over the surface of a solid (the paper).

Chromatography Activity



- Materials: White cotton cloth (can be old t-shirt), Sharpie permanent color markers, rubber band, plastic cup, rubbing alcohol and eye dropper.
- Process: Stretch the cloth over the cup and secure with the rubber band. Next use the markers to dot different colors in a circle on the top of the cloth. Then fill the eye dropper with rubbing alcohol and drop several drops into the center of the circle.
- Result: The reaction occurs because applying the rubbing alcohol separates the inks into its color components.

Taste



- What is generally categorized as “taste” is basically a bundle of different sensations: it is not only the qualities of taste perceived by the [tongue](#), but also the [smell](#), texture and temperature of a meal that are important. The “coloring” of a taste happens through the [nose](#). Only after taste is combined with smell is a food’s flavor produced. If the sense of smell is impaired, by a stuffy nose for instance, perception of taste is usually dulled as well.
- Like taste, our sense of [smell](#) is also closely linked to our emotions. This is because both senses are connected to the [involuntary nervous system](#). That is why a bad taste or [odor](#) can bring about [vomiting](#) or [nausea](#). And flavors that are appetizing increase the production of [saliva](#) and [gastric](#) juices, making them truly mouthwatering.

Ice Cream in a Bag Activity



- Materials per resident: Three Ziploc quart bags, 1/4 cups of milk, 1 teaspoon of sugar, 1/2 teaspoon of vanilla, rock salt, ice cubes, and kitchen towel.
- Process: Place the food inside a Ziploc, then place inside a second Ziploc and seal. Next place ice and rock salt in the second Ziploc and seal.
- Have each resident shake, squeeze, roll the Ziploc for about 30 minutes (You can combine this process with music rhythm exercise!)
- Result: Fresh ice cream – the rock salt melts the ice by lowering the freezing temperature of the water and the melting draws heat energy from the food.

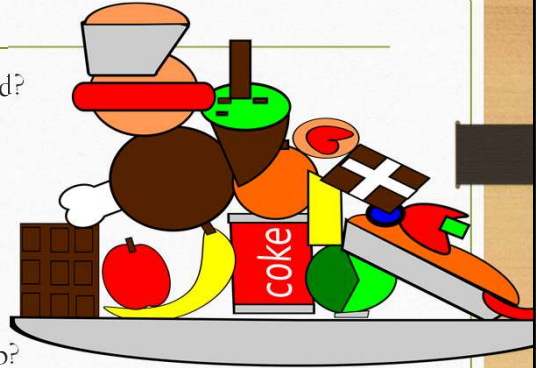
Baking Activity Tricks



- John Zeisel, author of **I'm Still Here** points out that even in later stages of dementia residents retain “institutional memory”.
- Baking activity – making cupcakes. Residents can use the safe sand to mix the recipe, fill cupcake trays, roll out pie dough, etc. All safe without plastic gloves. Then remove the trays for ‘baking’ and while you bake the real mix and the residents smell it baking, do food trivia. Serve the real cake and give a shaker of powder sugar in place of icing.
- Eg. Betty Crocker was invented in 1921 by Sam Gale, Washburn Crosby's advertising director, because he didn't think women would take cooking advice from a man.

Food Fun While It Bakes

- What state is the fruitcake capitol of the world?
- Where was the ice cream cone invented?
- How was the chocolate chip cookie invented?
- Where do marshmallows come from?
- Where was Pepsi invented?
- What state is the birthplace of the potato chip?



Hearing – Musical benefits



- Numerous studies have proven music is remembered even in late stage dementia.
- Musical activity examples – YouTube Tuesdays; Sing-a-Longs; iPods with familiar tunes; Joy in Action and Musical Bingo
- Activity – Chair Dancing
- Alternative Therapies in Health and Medicine. 6 (Nov 1999): 49-57. Music therapy increases serum melatonin levels in patients with Alzheimer's disease. Accessed October 26, 2012. <http://www.alternative-therapies.com/index.cfm/fuseaction/archives.main>

Reducing Sundowning Research

- Published in Healthline.org on August 21, 2013 and approved by [George Krucik, MD, MBA](#) – ways to reduce sundowning behaviors
- Stick to a schedule. Joyce Simard, MSW, is the founder of Namaste Care and an Associate Professor, School of Nursing, at Western Sydney University of Australia.
- Move people with dementia from where they eat to “the club” for activities. Give each a ‘job’ then a game, then leave this area for lunch. Return after lunch for an activity that is the same theme daily – eg. art on Monday.



More light and less naps

- Light up the late afternoon and evening hours. According to studies published in *Clinical Geriatrics*, people who were exposed to more light late in the day showed less agitation. Light exposure helps your body recognize the difference between day and night.
- Fatigue is a common trigger for sundowning. Being well rested can help combat symptoms. Stay active during the day with activities geared to your level of physical and mental health to improve sleep quality and reduce sundowning symptoms. Daytime napping, confusion, and agitation can make it hard to settle down to sleep at night.



Less TV and More Music

- Stick to simple activities that aren't particularly challenging or frightening. People with dementia should not watch frightening events on the news programs as they can not distinguish between near and far away. Frustration and stress can add to confusion, delirium, and irritability in people who are affected by sundowning.
- Put on soft music to create a calm and quiet environment. Music can help with eating. Turn off the TV, put on the same music every meal and eating improved.



thank
you!

Questions? Contact me at: Guitarwithgloria@yahoo.com