

Nutrition — in — Advanced Illnesses



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Living before Leaving

2nd Edition

“I don’t feel like eating”



“I don’t feel like eating” is a common remark made by our loved ones with advanced illnesses.

Common causes include:

- Changes in sense of taste or smell
- Constipation
- Medication and/or treatment side effects
- The illness itself – such as cancer, organ failure, advanced dementia
- Poorly controlled symptoms e.g. pain, breathlessness, confusion
- Mouth discomfort e.g. dryness, sores, thrush
- Poor dentition
- Difficulties chewing or swallowing (see next page)
- Chemical imbalances
- Mood-related issues

Difficulties swallowing

This is due to the weakening of muscles involved in swallowing or difficulty in coordinating these muscles. Early recognition of the following signs can allow assessment and appropriate measures to be taken to reduce the risk of choking.

Inform the doctor or nurse if you notice:

- Frequent throat-clearing, coughing or choking during or after swallowing
- Wet “gurgling” sound after drinking and/or while resting
- Prolonged chewing and food left in the mouth after swallowing
- Refusal to swallow
- Multiple swallows per spoonful
- Breathlessness during/after a meal
- A sensation of something stuck in the throat
- Eating or drinking less than usual
- Excessive drooling or food lost from the mouth
- Weight loss



A common complication resulting from poor swallowing is aspiration pneumonia - a lung infection that happens when food enters the windpipe instead of the stomach.





Improving nutrition and the mealtime experience

In Singapore, food is strongly associated with expressions of love and care. It is difficult to see our loved ones start losing weight or not being able to enjoy meals prepared for them. Although not all causes of appetite and weight loss are reversible, there are factors we can consider to optimise their nutrition, comfort and quality of life. These include:

1. Accepting changes in food preferences

- Your loved one may have enjoyed certain types of food in the past, but their preferences can change – a sambal belacan lover in the past may now prefer plain porridge with simple bland side dishes.
- Listen to your loved one, observe their responses to food and drinks, and be open to your loved one's changing feedback.

2. Assist and pace with your loved one

- Eating can be tiring for your loved one especially those with advanced illnesses. Take frequent breaks during the meal.
- Ensure your loved one has swallowed the food before feeding the next spoonful.
- Provide small sips of fluid between mouthfuls of food to help clear the food in the mouth.
- Allow your loved one's body to guide you in the amount of food and fluids to feed. Force-feeding will cause distress to yourself (as the caregiver) and your loved one. It can also cause physical discomfort or pain.

3. Keep the mouth fresh and clean

- Remove and clean dentures before and after every meal.
- Continue to brush daily using a toothbrush with ultra-soft bristles.
- Regular mouth rinses also help to keep the mouth fresh. A simple homemade mouth rinse uses half teaspoon of table salt dissolved in four cups of warm water.
- Look out for mouth ulcers, sores or patches of red or white which may indicate a fungal infection. Inform the doctor or nurse if you notice such changes.



- Keep a small sipper bottle with their favourite drinks by their bedside to allow frequent sips or a small spray bottle to moisten their mouth.
- If your loved one is no longer able to drink or swallow, use an oral swab stick to gently clean their mouth and apply moisturising mouth gel to keep their mouth moist and clean.

4. Make mealtimes more enjoyable

- Have meals in a well-lit and relaxing environment e.g., in the company of family or friends, play some soft background music.
- If needed, put on spectacles for your loved one to help them better appreciate what they are eating.
- Place dishes and cutleries within easy reach.
- Encourage your loved one to eat at the table, or at least out of bed.
- It is good to remain upright for at least 30 minutes after each meal or snack. Maintain a good upright sitting posture on a chair or by being propped up well on a bed.



5. Make food more appealing

- Use natural yet contrasting coloured ingredients in a dish, e.g., mix diced carrots and mashed potatoes with a side of broccoli.

6. Make every mouthful of food count

- Aim for high calorie, high protein diet, for example adding sesame oil, or egg to the regular diet. If your loved one has difficulty in swallowing solids, consider fluids such as soya milk, fruit smoothies and ice cream.

7. Serve small meals or snacks throughout the day

- Encourage your loved one to decide when or what they would like to eat.
- 5 to 6 small meals a day may be easier for your loved one than 3 large meals.



8. Use a suitable consistency (Refer to Annex 1 and 2) for those who have feeding, chewing or swallowing problems

- The speech therapist would have recommended the level of modified consistency (see illustration below) based on their assessment.

The IDDSI Framework

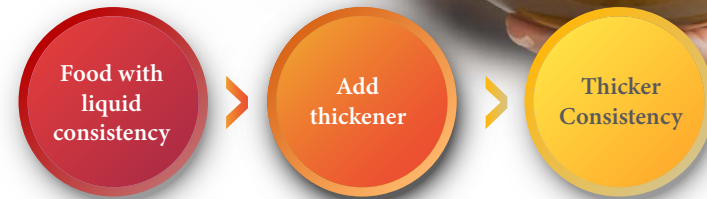
Providing a common terminology for describing food textures and drink thicknesses to improve safety for individuals with swallowing difficulties.



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ANNEX 1



Modified fluid consistency

If your loved one has difficulty swallowing, you may be advised to modify the consistency of the fluid he or she drinks. This also applies to clear soups, liquid desserts and watery porridge. Fluid with thicker consistency moves slower through the mouth, allowing better control during swallowing. While this does not totally prevent choking or accidental swallowing into the lungs, it is believed that the risk will be reduced.

Commercially-available powder thickeners can be bought from pharmacies. To achieve recommended consistency, follow the instructions available on the packaging. Do bear in mind that some thickeners do not keep the fluid thickened for a long period. Always check the consistency of the fluid again before giving it to your loved one. If necessary, medications can be given in a syrup form or pills can be crushed and mixed with the appropriately thickened fluid. Please check with the pharmacist before crushing the pills.

Modified solid foods

In general, softer and easy to chew foods are more manageable by the elderly or if the person is unwell. When swallowing becomes a challenge, healthcare professionals may suggest a modified diet.

1. Regular diet (IDDSI Level 7)

Food that can be in large pieces, hard, crunchy, dry, chewy, or fibrous. Biting is required to break bigger pieces of food apart. Chewing is needed to mash food before swallowing. Requires no special preparation. May contain bones, seeds, skin.

Example: Wholemeal bread, nasi lemak, biscuits



2. Easy to chew diet (IDDSI Level 7)

Normal, everyday food of soft, tender texture. You should be able to bite off pieces of soft and tender food. Choose bite sizes that are safe to chew and swallow. Sizes of food pieces are not restricted. **No tough, chewy, fibrous, stringy, or hard foods.**

Example: Chee cheong fun, swiss roll, soft rice



3. Soft and bite-sized diet (IDDSI Level 6)

Food that is soft, tender and moist in texture. Easily broken apart by a fork/spoon/chopsticks. Chewing is needed to mash food before swallowing. Prepare as small bite-sized pieces. **No larger than 15mm x 15mm pieces.**

Example: Bite-sized steamed fish, chopped soft cabbage, cut-up steamed egg



4. Minced and moist diet (IDDSI Level 5)

Food that is soft, moist and finely minced with no excess liquid seen. Requires minimal chewing. Food pieces appear in small lumps **no larger than 4mm in width and 15mm in length.**

Example: Oats, softened crushed biscuits



5. Pureed diet (IDDSI Level 4)

Food that is smooth and lump-free. Does not require any chewing. Usually prepared with a blender. Cannot be sucked through a straw. Equivalent to Extremely Thick Fluids.

Example: Black sesame paste, mousse, mashed potatoes



6. Liquidised diet (IDDSI Level 3)

Smooth texture with no 'bits' e.g., lumps, fibres, skin, husk. Can be eaten with a spoon or drunk from a cup but runs through the prongs of a fork. Equivalent to Moderately Thick fluids.

Example: Watery blended diet



Scan here to learn more about modifying consistencies of food

 **Diet suggestions**

| Pureed diet (IDDSI Level 4) | Minced and moist diet (IDDSI Level 5) |
|---|---|
| Breakfast | |
| <ul style="list-style-type: none"> • Blended oats • Blended porridge • Yoghurt • Blended tau suan or green bean | <ul style="list-style-type: none"> • Oats • All the following cut up no longer than 4mm in width and 15mm in length: Minced kway teow, minced spinach |

| Soft and bite-sized diet (IDDSI Level 6) | Easy to chew diet (IDDSI Level 7) | Regular diet (IDDSI Level 7) |
|--|--|---|
| Breakfast | | |
| <ul style="list-style-type: none"> • Scrambled egg • All the following cut up no larger than 15mm x 15mm: Mee sua, kway teow, chee cheong fun, lontong | <ul style="list-style-type: none"> • Carrot cake • Chwee kueh • Chee cheong fun • Soft bread with jam • Bao with soft filling • Thosai | <ul style="list-style-type: none"> • Fried bee hoon • Roti prata • Burgers • Sandwiches • Nasi lemak |

| Pureed diet (IDDSI Level 4) | Minced and moist diet (IDDSI Level 5) |
|--|--|
| Lunch | |
| <ul style="list-style-type: none"> • Cream soups • Pureed vegetables e.g., pumpkin, carrot, corn • Mashed potato • Blended meat or fish (blend with gravy) • Blended chawanmushi | <ul style="list-style-type: none"> • All the following cut up no larger than 4mm in width and 15mm in length: <ul style="list-style-type: none"> - Minced chopped soft vegetables, e.g., cauliflower, broccoli, carrot - Dhal curry with ingredients minced - Minced chawanmushi - Minced meat |
| Dinner | |
| <ul style="list-style-type: none"> • Blended porridge • Mashed potato • Pureed root vegetables • Cream soups • Orh nee • Hummus | <ul style="list-style-type: none"> • All the following cut up no larger than 4mm in width and 15mm in length: <ul style="list-style-type: none"> - Minced meat - Minced leafy or root vegetable - Hummus - Congee (ensure not watery) |
| Supper or Snacks | |
| <ul style="list-style-type: none"> • Blended Jelly/Jello • Milkshake • Mousse cake • Ice cream (please thicken if advised to take thickened fluids) • Smoothie • Plain yoghurt • Sesame or red bean paste | <ul style="list-style-type: none"> • All the following cut up no larger than 4mm in width and 15mm in length: <ul style="list-style-type: none"> - Bubur hitam - Finely minced soft fruits - Bread soaked in coffee and mashed till minced texture - Milo (please thicken if advised to take thickened fluids) - Fruit yoghurt |

| Soft and bite-sized diet (IDDSI Level 6) | Easy to chew diet (IDDSI Level 7) | Regular diet (IDDSI Level 7) |
|---|---|--|
| Lunch | | |
| <ul style="list-style-type: none"> • All the following cut up no larger than 15mm x 15mm: <ul style="list-style-type: none"> • Soft tofu • Steamed oily fish • Shepherd's pie • Mee sua • Kway teow • Beancurd (tau kua) | <ul style="list-style-type: none"> • Soft tofu • Steamed oily fish • Shepherd's pie • Mee sua • Kuay teow • Beancurd (tau kua) | <ul style="list-style-type: none"> • Boiled eggs • Grilled oily fish e.g., salmon • Stewed/curry meat • Chapati with dhal • Chicken chop • Fish and chips • Chicken nuggets • Bee hoon |
| Dinner | | |
| <ul style="list-style-type: none"> • All the following cut up no larger than 15mm x 15mm: <ul style="list-style-type: none"> • Sweet and sour soup (please thicken if advised to take thickened fluids) • Steamed fish fillet with gravy • Thinly sliced soft meat with leafy, green vegetables | <ul style="list-style-type: none"> • Sweet and sour soup (please thicken if advised to take thickened fluids) • Steamed fish with gravy • Thinly sliced soft meat with leafy, green vegetables | <ul style="list-style-type: none"> • Tauhu telor • Takoyaki • Leafy vegetables • Idli • Chicken satay • Appom |
| Supper or Snacks | | |
| <ul style="list-style-type: none"> • All the following cut up no larger than 15mm x 15mm: <ul style="list-style-type: none"> • Soft fruits • Cheese cake • Pandan cake | <ul style="list-style-type: none"> • Soft fruits • Cheese cake • Pandan cake | <ul style="list-style-type: none"> • Cheng tng • Egg tart • Peanut pancake • Kueh lapis • Mini fruit tart • Digestive biscuits • Curry puff |

Other important considerations:

1. If using Milo or other thin fluids to soften bread or biscuits, do remember to drain excess fluid before feeding.
2. Avoid mixed consistencies (solid + liquid) in one mouthful of food as it is challenging to manage if your loved one has swallowing impairment. For example, if bee hoon is served in soup with minced meat and chopped vegetables, drain away the soup when feeding the bee hoon. Feed the minced meat and chopped vegetables separately. Thicken the excess soup to appropriate consistency, if served separately.
3. When feeding porridge or oats, enzymes from the saliva on the spoon can gradually cause the food to become more watery. Instead of stirring the food, scoop from the sides of the bowl.



ANNEX 2

The following recipes are examples of how one dish can be modified to suit all four consistencies. Once you are familiar with the modification process, you can modify most dishes as needed for your loved one.



Soy Sauce Chicken with Ginger and Capsicum

| Ingredients | Quantity |
|--|------------------------------------|
| Chicken breast, diced | 2 pieces |
| Ginger | 6 slices |
| Garlic, peeled and finely chopped | 2 cloves |
| Small onion, peeled and diced | 1 |
| Red capsicum*, seeds removed and diced | ½ |
| Green capsicum*, seeds removed and diced | ½ |
| Cooking oil | 1 Tbsp |
| Light soy sauce | 1 Tbsp |
| Dark soy sauce | ½ tsp |
| Sugar | ¼ tsp |
| Chicken broth | ½ cup |
| Corn flour slurry | 1 Tbsp corn flour and 2 Tbsp water |
| Coriander | To garnish |

Nutrition Information

Servings: 2
Serving size: 313 g

Each serving (313 g) contains:

Calories: 290 kcal
Carbohydrates: 18 g
Protein: 29 g



Modified consistency instructions:

| IDDSI Level | Diet | Instructions |
|-------------|--|---|
| 7 | Regular (before cooking) | Dice chicken breast into bite-sized pieces. |
| 7 | Easy to chew (after cooking) | Remove ginger and any hard condiments. Ensure that chicken breast and capsicums are cooked till soft and can be broken by the side of fork/spoon easily or be mashed by a fork easily. |
| 6 | Soft and bite-sized (after cooking) | Remove ginger and any hard condiments. Ensure that chicken breast and capsicums are cooked till soft and can be broken by the side of fork/spoon easily or be mashed by a fork easily. Cut up chicken and capsicums into maximally 15mm x 15mm sizes. |
| 5 | Minced and moist (after cooking) | Remove ginger before blending dish with a blender in pulses. Dish should be finely minced till no larger than 4mm in width and 15mm in length. |
| 4 | Pureed (after cooking) | Remove ginger before blending dish till smooth and lump-free. Add gravy into blend as needed. |

* Remove capsicum skin for easy to chew, soft and bite-sized, minced and moist, and pureed consistencies. To do this, boil capsicum for 5-10 minutes and then submerge in ice water. The skin can be peeled off easily after cooling.



Cooking instructions:

1. Heat up oil in a non-stick pan and stir-fry ginger, garlic, onion and capsicum until fragrant.
2. Add chicken pieces and stir-fry for two minutes before adding light and dark soy sauce, sugar, and chicken broth. Continue to stir-fry until evenly mixed.
3. Cover pan with a lid and allow to simmer on medium heat for 15 minutes. Stir occasionally to prevent burning.
4. Stir in corn flour slurry slowly to thicken gravy.
5. For regular textured diet, garnish with coriander before serving.

Steamed Egg Tofu with Spinach

| Ingredients | Quantity |
|---------------------------------------|----------------|
| Medium eggs | 2 |
| Silken tofu (sliced thinly / blended) | ½ box or 150 g |
| Spinach | 100 g |
| Pepper | ¼ tsp |
| Salt | ¼ tsp |
| Sesame oil | ½ tsp |
| Chicken broth | ¼ cup |

Modified consistency instructions:

| IDDSI Level | Diet | Instructions |
|-------------|--|---|
| 7 | Regular <i>(before cooking)</i> | Use sliced tofu. |
| 7 | Easy to chew <i>(before cooking)</i> | Use sliced tofu. |
| 6 | Soft and bite-sized <i>(before cooking)</i> | Use sliced tofu cut up to maximally 15mm x15mm sizes. |
| 5 | Minced and moist <i>(after cooking)</i> | Use blended tofu. |
| 4 | Pureed <i>(after cooking)</i> | Use sliced tofu for cooking. After cooking, blend steamed egg and tofu mixture before proceeding with Step 6. |

Cooking instructions:

1. Fill pot with water and add 2 drops of oil. Boil the spinach for 3 minutes (or till soft). Coarsely chop boiled spinach.
2. Blend spinach with chicken broth until a smooth texture is achieved.
3. Break the eggs into a bowl. Measure and add ¼ cup water into the bowl. Add salt, pepper and sesame oil to taste. Beat until evenly mixed.
4. Place tofu in a deep dish, then pour the beaten egg mixture in.
5. Steam the tofu and egg mixture for 10 minutes or until egg mixture is firm. Partially cover the deep dish with a lid during the steaming.
6. Pour spinach over tofu and egg mixture. Smoothen out the spinach layer. Steam for another 2-3 minutes and serve hot.

Nutrition Information

Servings: 2
Serving size: 201 g

Each serving (201 g) contains:

Calories: 39 kcal
Carbohydrates: 6 g
Protein: 11 g

Persimmon and Barley Dual Dessert

| Ingredients | Quantity |
|-------------------------------|----------|
| Ripe persimmon (skin removed) | 1 |
| Barley | 100 g |
| Honey | 1 Tbsp |

Modified consistency instructions:

This dessert requires blending, which creates a dessert suitable for all prescribed consistencies.

Avoid using Holland Barley as it is too starchy and will not blend easily.

Cooking instructions:

1. Boil barley until soft. Keep some barley water aside for blending the barley later.
2. Blend persimmon into a puree, until smooth and lump-free. Set persimmon puree aside in the fridge.
3. Blend barley with honey and pour into a dessert cup or bowl. Add barley water as necessary to get a smooth, lump-free consistency.
4. Pipe in and layer persimmon puree over the barley puree.
5. Served either chilled or warm.

Nutrition Information

Servings: 2
Serving size: 130 g

Each serving (130 g) contains:

Calories: 261 kcal
Carbohydrates: 56 g
Protein: 8 g

Smoothies

Banana and Cinnamon Soya-shake

| Ingredients | Quantity |
|--|----------|
| Banana (large) | 1 |
| Soya milk* (or high calcium soya milk) | 250 ml |
| Honey | 2 Tbsp |
| Ground cinnamon | 1 pinch |

Sweet Smoothie

| Ingredients | Quantity |
|--------------------------|----------|
| Honeydew | 100 g |
| Mango (peeled and cubed) | 1 |
| Milk* (or full fat milk) | 50 ml |

Kiwi Lassi

| Ingredients | Quantity |
|--------------------------------------|----------|
| Kiwi (peeled) | 1 |
| Plain yoghurt* (or full fat yoghurt) | 10 g |
| Honey | 1 tsp |
| Cold water | 50 ml |
| Crushed ice | ½ cup |

Very Orange Smoothie

| Ingredients | Quantity |
|--------------------------------------|----------|
| Papaya | 20 g |
| Orange (peeled, deseeded) | ½ |
| Plain yoghurt* (or full fat yoghurt) | 15 g |
| Honey | 1 Tbsp |
| Lemon juice | 1 tsp |

Preparation instructions

1. Blend ingredients together until smooth.
2. Best served chilled. Smoothies can be stored in the refrigerator but they are best consumed fresh because flavour and nutrients are lost over time.

* To prepare a modified texture fluid consistency, increase or reduce liquid quantity to thin out or thicken the consistency of smoothie. This may not be suitable for patients on modified fluid consistencies. If unsure, please check with a speech therapist.

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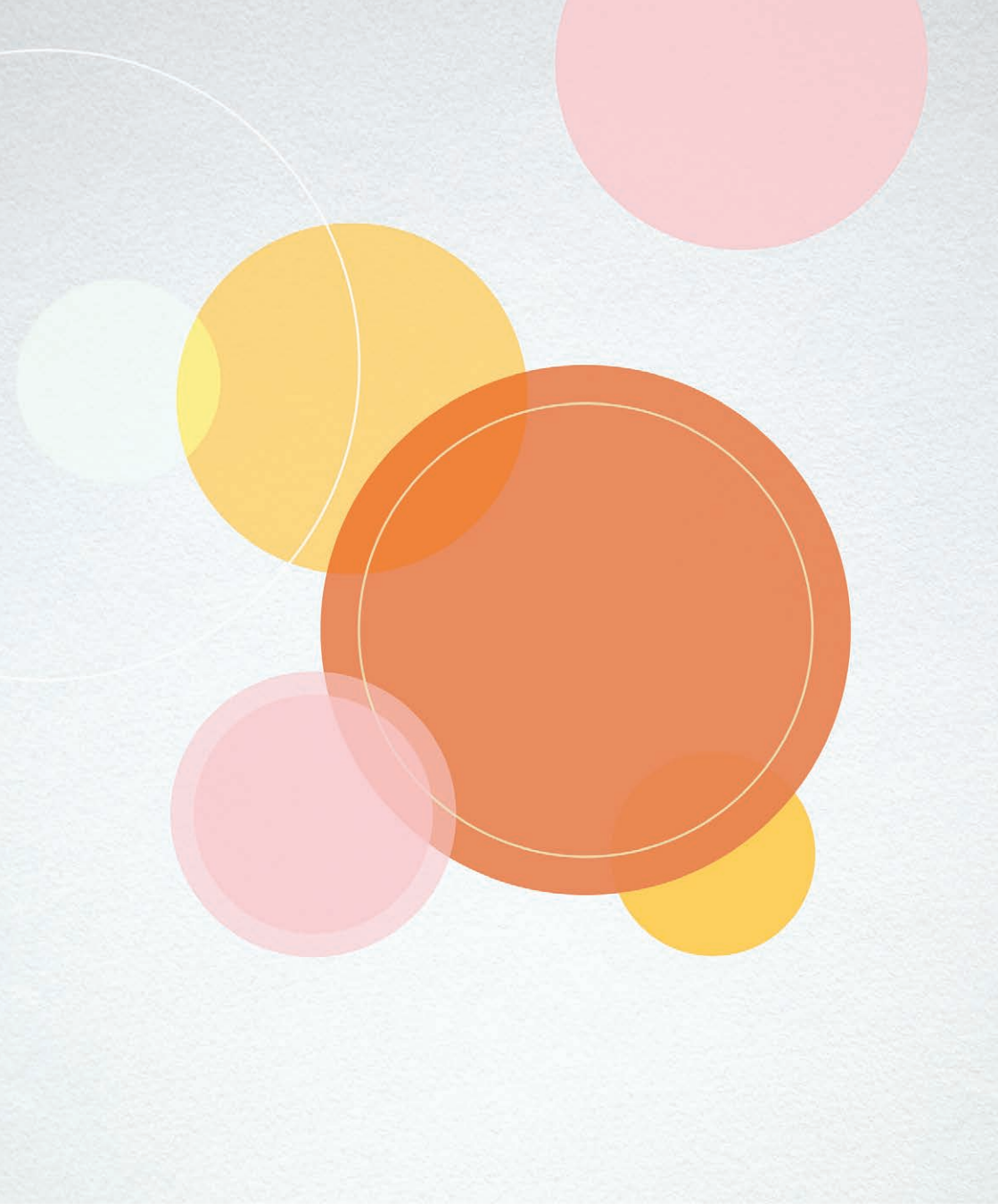
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