

Nutrition Guidelines for Sleeve Gastrectomy



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**ARKANSAS CHILDREN'S HOSPITAL
CENTER FOR OBESITY AND ITS CONSEQUENCES
IN HEALTH (C.O.A.C.H. CLINIC)**

**ARKANSAS CHILDREN'S CENTER FOR EXERCISE
AND NUTRITION THERAPY**

Contact Information

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General Diet Progression

Pre-Operative Diet

Time Period	Diet	Calories	Protein (g) per day
2-weeks prior to surgery	Liquid diet with protein supplements	~1,000	50-60 grams

Post-Operative Diet

Start (Approximate)	Duration (Approximate)	Diet	Protein (g) Per day	Fluid (fl. Oz.) Per day
1 day after surgery	2-3 days	Clear Liquids	N/A	48-64 (4 oz./hr.)
3-4 days after surgery	3-4 weeks	Full Liquids	50-60	64-90
4 weeks after surgery	2 weeks or more (dependent on tolerance)	Pureed	60	64-90
5-6 weeks after surgery	2 weeks or more (dependent on tolerance)	Soft	60	64-90
As tolerated	As tolerated	Gradually introduce more foods	60	64-90
As tolerated	For LIFE!	Healthy Lifestyle	At least 60	64-90

Pre-Surgery Instructions

Pre-Surgery Goals

IT WILL BE HELPFUL TO BEGIN ADJUSTING TO A NEW LIFESTYLE BEFORE SURGERY IN ORDER TO HELP YOU REACH YOUR POST-SURGERY GOALS.

✓ Hydration, hydration, hydration <i>- Get used to hydrating yourself well.</i>	✓ Review information on protein sources.
✓ Wean off caffeinated beverages.	✓ Review information on diet stages and diet progression.
✓ Avoid high calorie liquids and carbonated liquids.	✓ Plan grocery list with appropriate foods.
✓ Begin Vitamin/Mineral supplements. <i>- Major focus includes: Thiamin (B1), Cobamalin (B12), Iron, Vitamin D (25-OH Vitamin D), Folate</i>	✓ Eat 3 meals per day and begin to work on structured eating. <i>- Scheduled eating is very important after the surgery, so it's best to get in the habit of following this plan.</i>
✓ Increase your fruit and vegetable intake.	✓ Choose lower fat foods and avoid fried foods.
✓ Physical Activity – Improve your activity as much as you can. You will still need activity after surgery. Aim for activity 3-5 times per week.	

Preparation for Surgery

Groceries and Supplies

Groceries

- ✓ Artificial sweetener
- ✓ Broth or bouillon cubes (chicken, beef, vegetable)
- ✓ Cream of Wheat or cream of rice cereal
- ✓ Jell-O (no sugar added)
- ✓ Popsicles (sugar free)
- ✓ Pudding (sugar free)
- ✓ Milk (skim or 1%)
- ✓ Crystal Light or other sugar free flavoring packets
- ✓ Herbal tea or decaffeinated tea
- ✓ Oatmeal
- ✓ Instant mashed potatoes
- ✓ Light yogurt (sweetened with artificial sweetener; no fruit pieces)
- ✓ Low-fat small curd cottage cheese
- ✓ Carnation Instant Breakfast (no added sugar-blue box)

The following supplies and groceries will be essential in meeting your pre-surgery and post-surgery goals.

Supplies

- ✓ Blender or food processor
- ✓ Food diary
- ✓ Protein powder and/or ready-made protein drinks
- ✓ Multivitamins – chewable or liquid (**No Gummies**)
- ✓ Calcium Citrate – chewable or liquid (**No Gummies**)
- ✓ Measuring cups
- ✓ Strainer

Vitamin and Mineral Supplementation

Supplement	Dosage
Complete Multivitamin (No gummies)	1-2 daily
Calcium Citrate with vitamin D	500-600 mg/day (TWICE/day) Do not take with Multivitamin
Vitamin B-12	1,000 mcg injection/month

It is very important to stay on top of your vitamin schedule. After the surgery, your food intake will not be enough to meet your vitamin/mineral needs, therefore you will need to supplement correctly.

Multivitamin: Initially you will need to take 1 chewable children's vitamin. Later you can graduate to 1 adult vitamin, but for now 2 chewable children's vitamins will work best. **Flintstone's complete and Centrum Children's complete with Iron are good options**

Calcium Citrate: You need ~1,000mg of calcium per day to avoid osteoporosis. Calcium citrate is more easily absorbed, because it does not depend on gastric juice. **Avoid oscal, caltrate, and tums because these use calcium carbonate.**

Vitamin B-12: Vitamin B-12 is essential to growth and cell reproduction. This vitamin requires gastric juice to be absorbed. Supplementation will be required to avoid deficiency.

Meal Replacement Shake Options

**Prepare the powdered mixes with nonfat/skim milk or milk alternative (lactose-reduced milk, soy milk)

Product Name	Form	Flavors	Calories/ Serving	Protein grams/ Serving
Slim-fast	Pre-made bottles	Chocolate, French Vanilla, Strawberry, Cappuccino Delight	180-190	10
Slim-Fast	Powdered mix made with 8oz skim milk	Chocolate, French Vanilla, Strawberry	200	10
Carnation Instant Breakfast Essentials (No Sugar Added)	Pre-made bottles or powdered mix made with 8oz skim milk	Chocolate, Vanilla, Strawberry	150	13
Boost Calorie-Smart	Pre-Made bottles	Chocolate, Vanilla	190	16
Beneprotein	Powder (1 scoop or 1 packet)	Unflavored	25	6
Unjury Protein Powder	Powder	Chocolate Classic, Vanilla, Chicken Soup, Chocolate Splendor, Strawberry Sorbet, Unflavored	100	21
HMR Shake: HMR 800 MHR 120 HMR 70 plus (lactose-free)	1 packet 1 scoop 1 packet	Vanilla or Chocolate	160-170 120 110	16 11 14

Pre-Surgery Diet

FOLLOW FOR 2 WEEKS PRIOR TO SURGERY

WHY IS A PRE-SURGERY DIET RECOMMENDED?

- Reduces the size of your liver to make the surgery easier.
- Helps provide an easier transition to post-surgery diet.

The majority of your calories and protein should come from meal replacement shakes. You can have non-starchy vegetables at lunch and dinner in small portions.

Goal: 1,000 calories and at least 50 grams of protein.

Amount Allowed	Foods and Beverages
Unlimited	<ul style="list-style-type: none">• Sugar free beverages• Sugar free gum• Sugar free Jell-O• Low-sodium broth
Limited	<ul style="list-style-type: none">• Non-starchy vegetables (limit to 2 cups/day) includes: lettuce, cucumber, onion, tomato, broccoli, carrot, mushroom, zucchini, peppers. <u>Does not include potatoes, corn or peas.</u>• Condiments (limit to 4 tbsp. per day) includes mustard, salsa and vinegar• Fat free dressing (limit to 2 tbsp. per day)
Not Allowed	<ul style="list-style-type: none">• Added fats, oils, butter, margarine• Alcoholic beverages

Post-Surgery Instructions

Your Post-Surgery Diet

GENERAL GUIDELINES:

- 60-80 grams protein

At meals, eat protein foods first, then fruits and vegetables, then carbohydrates.

- 8-11 cups of water

Do not drink liquids within 30-45 minutes of meals. Prevent dehydration by keeping a small medicine cup with you and taking sips throughout the day. Aim for 1 oz. of fluid every 15 minutes.

✓ Diet progression will be as tolerated and specific to each patient.	✓ Read labels- know what you are putting in your body.
✓ Avoid mindless eating in front of the computer, TV, or while doing other activities.	✓ Do not chew gum. If you swallow it, gum can block the stomach opening.
✓ Assess your feelings: are you hungry, thirsty, bored, stressed, or sad?	✓ Sit down to eat. Chew slowly and thoroughly. Plan meals/snacks ahead of time.
✓ Exercise is important for long-term weight loss and maintenance. Walk for exercise for the 6 weeks following surgery. More strenuous exercise could then be added. Use of weights is encouraged to help build muscle.	✓ Use an app to help track intake and activity. Look up foods when eating out. Examples: My Fitness Pal, The Carrot, Lose It, Calorie Counter, Spark People, Restaurant Nutrition.
✓ Your stomach can only hold a small amount of food. Stop eating when you feel full. If ignored, vomiting will likely follow.	✓ NO STRAWS! Straws make you swallow air. That can cause bloating and can stretch the pouch.

Rules for Eating After Surgery

- ✓ Plan 6 small meals throughout the day, in addition to 64-90 oz. liquid

A sample meal plan could look like this:

7:00 am – Breakfast
8:30 am – 1 cup liquid
10:00 am – Morning Snack
11:30 am – 1 cup liquid
1:00 pm – Lunch
2:30 pm – 1 cup liquid
4:00 pm – Afternoon snack
4:45 pm – 1 cup liquid
5:30 pm – Dinner
7:00 pm – 1 cup liquid
8:00 pm – Evening snack
9:00 pm – 1 cup liquid

- ✓ Always choose protein first at each meal/snack
- ✓ Eat slowly and chew your food carefully
- ✓ Take very small bites/sips of food and beverages
- ✓ Avoid caffeine, carbonation, straws, gum, alcohol

Clear Liquid Diet

Day 1-4

Main goal for clear liquids is hydration!

- No carbonation
- No sugar
- No calories
- No caffeine
- No alcohol

The following are examples of acceptable clear liquids:

- Water
- Flavored water (fruit 2-0, Propel, Vitamin Water Zero, Sobe Water, or Mio)
- Crystal Light (made with NutraSweet sugar substitute)
- Lemonade light (Minute Maid brand)
- Decaffeinated coffee or tea (you may add milk and/or sugar substitute)
- Salty liquids: Tomato or V-8 juice, bouillon or clear broth
- Solid liquids: Diet Jell-O (made with NutraSweet)
- Sugar-free popsicles (less than 25 calories each)

DAY 1 and 2

- Water, decaffeinated tea and coffee, Crystal Light (no tea flavors), clear broth or bouillon, sugar free Jell-O

DAY 3 and 4

- Same as Day 1 and 2 plus Boost and light yogurt

No set calorie goal for this stage.

Full Liquid Diet

4 Weeks +

Upon discharge, you will follow a full liquid diet for the 4 weeks after surgery. Full liquids will have more substance than clear liquids, so you may feel fuller faster than you did with only clear liquids. It is recommended to continue drinking clear liquids throughout the day as well.

Start taking vitamins the first full day at home.

Start	Duration	Foods/ Beverages	Calories per day	Protein (g) per day	Fluid (fl. oz.) per day
3-4 days after surgery (dependent upon tolerance)	3 – 4 weeks	High protein liquids and foods with smooth consistency	500-600	60	64-90

WHAT COUNTS AS A FULL LIQUID?

- Sugar free pudding
- Fat free or 1% milk
- High protein drinks (see pre-surgery supplements)
- Light yogurt (sweetened with artificial sweeteners; no fruit pieces). Greek yogurt is also a good way to increase protein.

Pureed Diet

5 weeks +

GOALS:

- Provide enough protein, fluid, vitamins, and minerals.
- Decrease side effects of surgery.

Start	Duration	Foods/ Beverages	Protein (g) per day	Fluid (fl. oz.) per day
4 weeks after surgery	2 weeks or more (dependent on tolerance)	Previously allowed foods AND foods blended to consistency of applesauce	60	64-90

Do NOT attempt to consume any solid foods or solid pieces of food.

Blend all foods to the consistency of applesauce.

Pureed Diet

How to blend/puree foods:

1. Cut foods into small pieces.
2. Put food into blender or food processor.
3. Liquids which may be added include skim or non-fat milk, broth, low fat “chunk-free” soups, non-fat plain yogurt, 1% cottage cheese, low-fat sour cream.
4. Blend until the consistency is very smooth.
5. If there are larger pieces, you will need to strain those pieces.
6. You may season however you would like, however you may want to avoid spicy seasonings.

Acceptable Pureed Foods/Liquids

Blended soups	<ul style="list-style-type: none"> • Turkey • Chicken • Vegetable 	Blended Meats/Meat Substitutes	<ul style="list-style-type: none"> • Tuna or salmon packed in water • Canned turkey or chicken packed in water • Eggs/egg substitute • Fat free refried beans • Beans • Tofu • Hummus
Blended Fruits	<ul style="list-style-type: none"> • Ripe mashed bananas • Unsweetened applesauce • Fruit canned in water (drained, rinsed and pureed) 	Blended Vegetables	<ul style="list-style-type: none"> • Yams (fresh, not canned in syrup) • Carrots • Squash (no seeds) • Peas • Zucchini (no seeds)

Pureed Diet Guidelines

Beverage Guidelines:

- About half of what you drink should be high protein drinks (should have at least 15 grams of protein, less than 20 grams of carbohydrate and less than 5 grams of fat per cup).
- At least half of what you drink should be sugar-free liquids.
- Do not drink liquids with a meal or 30 minutes after a meal. This can cause the pouch to stretch and slow down your weight loss.
- Do not drink carbonated drinks. The bubbles may cause gas and bloating and stretch the stomach.
- Sip, don't gulp!

Meal Guidelines:

- Stop eating when you first feel full.
- Take at least 15 minutes to eat each meal.
- Take chewable multiple vitamin/mineral supplements daily. Do not stop taking your vitamins, no matter how good you feel.

Pureed Diet

Example 1-Day Menu

Time	Food/Beverage	Grams of Protein	Vitamin/Mineral
8:00 am	4 to 6 tbsp. cooked cream of wheat made with skim milk	3	1-2 chewable calcium tablet
9:00 am	1 cup skim milk	8	
10:00 am	1 cup sugar free liquid	0	
11:00 am	3 tbsp. cottage cheese, 1 tbsp. pureed peaches	7	
12:00 pm	1 cup sugar free liquid	0	
1:00 pm	2 to 3 tbsp. strained beef, 2 tbsp. pureed beans, 2 tbsp. mashed potatoes	10	1 chewable multivitamin tablet
2:00 pm	1 cup sugar free liquid	0	
3:00 pm	1 cup liquid protein supplement		
5:00 pm	6 tbsp. sugar free pudding made with 1 scoop of protein powder	7	
6:00 pm	2 to 3 tbsp. strained turkey, 2 tbsp. pureed carrots, 2 tbsp. mashed potatoes	8	
7:00 pm	1 cup skim milk	8	
8:00 pm	3 tbsp. cottage cheese, 3 tbsp. applesauce with sprinkle of cinnamon	7	1-2 chewable calcium tablet
9:00 pm	1 cup high protein cream of chicken soup	7	
10:00	1 cup sugar free liquid	0	
	Total water Intake: 64 ounces		Total grams of protein: 65 grams

Soft Diet

Week 6 +

Start	Duration	Foods	Protein (g) Per Day	Fluid (fl. oz.) Per Day
5-6 weeks after surgery	2 weeks or more (dependent on diet tolerance)	Soft Foods	60	64-90 (8-11 cups)

- Chew, Chew, Chew! You cannot over-chew your food.
- Take 15 minutes to eat at each meal.
- Always eat protein first!
- Stop eating when you feel full. Vomiting may occur if you overeat. Overeating can stretch the pouch and prevent desired weight loss.
- Eat several small meals every day.
- Introduce new foods one at a time. If a food is not well tolerated, remove it from your diet for a week, and reintroduce it one week later.
- You may experience temporary lactose intolerance. Try substituting it with lactose-reduced milk (e.g. Lactaid) or take Lactaid pills with dairy.

Soft Diet

RECOMMENDED FOODS

High-Protein Foods:

- Light (low sugar) yogurt
- Low-fat cottage cheese
- Shredded low-fat cheese
- Tuna packed in water
- Crab, fish, scallops, and oysters (avoid fried)
- Skinless chicken or turkey, cooked until very tender and cut into small pieces
- Beans and lentils
- Low-fat deli meats

Other Healthy Choices:

- Cream of wheat, oatmeal, or Malt-o-Meal with added protein powder
 - Cold cereal soaked in milk until soggy
 - Cooked tender vegetables without peels and seeds
 - Ripe banana; fruit canned in its own juice or water (not canned in syrup)
 - Low-fat soups with added protein powder or strained meat
-

Soft Diet

FOODS NOT RECOMMENDED

“Sticky” Foods:

- Soft bread (it can make a dough ball and could plug the pouch outlet)
- Sticky or sweet rice
- Spaghetti and other pasta
- Macaroni and cheese
- High-fat cheese or melted cheese
- Raisins, prunes, or other dried fruits (these are too sweet)

Crunchy Foods:

- Granola and other cereals with nuts
- Raw vegetables, salad
- Nuts and popcorn
- Chips

Tough Foods:

- Tough or chewy meat
- Whole pieces of corn or whole peas (puree these before eating)

High-Fat Foods:

- Butter, margarine, or oil
- “Regular” mayonnaise, sour cream, cream cheese, and salad dressing
- Whole milk or half-and-half
- Ice cream, cake, cookie, pie, or other desserts
- Bacon, sausage, luncheon meats
- Gravy

Foods with seeds, peels, or husks:

- Strawberries or other berries
- Corn (unless pureed)
- Peas (unless pureed)

Soft Diet

Example 1-Day Menu

Time	SAMPLE MENU	Fluid	Vitamin
7:00am	1 egg, poached or scrambled without added fat ½ cup oatmeal with 1 scoop protein powder		1 Chewable Multivitamin tablet
8:00am	1 cup skim milk- Sip slowly (1/4 cup every 15 minutes)	8oz fluid	
9:00am	1 cup decaffeinated coffee- Sip slowly (1/4 cup every 15 minutes)	8oz fluid	
10:00am	1 cup liquid protein supplement- Sip slowly (1/4 cup every 15 minutes)	8oz fluid	
11:00am	1 cup sugar free lemonade-Sip slowly (1/4 cup every 15 minutes)	8oz fluid	
12:00pm	2-3 tablespoons strained beef 2 tablespoons mashed potatoes 2 tablespoons pureed green beans		1 Chewable Calcium tablet
1:00pm	1 cup water-Sip slowly (1/4 cup every 15 minutes)	8oz fluid	
2:00pm	1 cup decaffeinated tea with sugar substitute-Sip slowly (1/4 cup every 15 minutes)	8oz fluid	
3:00pm	1 cup liquid protein supplement-Sip slowly (1/4 cup every 15 minutes)	8oz fluid	
5:00pm	2-3 tablespoons strained turkey 2 tablespoons mashed potatoes 2 tablespoons pureed carrots		
6:00pm	½ cup sugar free instant pudding, made with 1 scoop protein powder		
7:00pm	1 cup liquid protein supplement-Sip slowly (1/4 cup every 15 minutes)	8oz fluid	
8:00pm	1 cup water-Sip slowly (1/4 cup every 15 minutes)	8oz fluid	
9:00pm	¼ cup low-fat cottage cheese ¼ cup unsweetened applesauce with a sprinkle of cinnamon		1 Chewable Calcium tablet
10:00pm	1 cup water-Sip slowly (1/4 cup every 15 minutes)	8oz fluid	

Healthy Lifestyle

4 months onward

Start	Duration	Foods	Protein (g) Per Day	Fluid (fl. oz.) Per Day	Volume
4 months after surgery	Rest of your life!	Incorporate more foods as tolerated.	At least 60g (15-20g per meal)	64-90	1-1.5 cups per meal

- Eat 3-4 meals per day
- *Note: At 6 months post-op, fluids may be decreased to 64oz per day. At this point, fluids may be consumed with meals as tolerated. Also, small amounts of caffeine and sugar-free carbonated beverages may be included.
- At this time, “sometimes foods”, or high calorie foods which are high-sugar and/or high-fat, may be included in moderation.
- *Limit the frequency of “occasional foods” to no more than once a week to avoid consuming excess calories which may contribute to weight gain or not further weight loss.
- Tips:
 1. Stop eating when you feel full.
 2. Include a lean protein at each meal.
 3. Eat a variety of fruits, vegetables, and whole grains.
 4. Use low-fat cooking methods (bake, broil, steam, microwave, or grill).

What about dining out and special occasions?

It is not recommended to eat out until your diet has advanced to the Healthy Lifestyle diet phase.

TIPS FOR EATING OUT:

- ✓ Choose grilled chicken or fish instead of red meat
- ✓ Avoid breaded meats or vegetables
- ✓ Avoid bacon and sausages
- ✓ Limit cheese
- ✓ Choose a baked potato with chives instead of french fries
- ✓ Choose salads with fresh veggies and use dressing on the side
- ✓ Try salsa as a condiment for salads and baked potatoes
- ✓ Choose condiments such as mustard instead of mayo and creamy dressings
- ✓ Do not “supersize” your meals

Other Important Information

School Considerations:

- You may need extended time to eat at lunch.
- Packing your own lunch and snacks may be better tolerated.
- Bring your own water bottle and vitamins to school.
- If permission from the doctor is warranted to have snacks/drinks in class, we can provide that.

College Considerations:

- Timing and frequency of class schedule may be important to structure around meals and snacks.
- Appropriate meal plan/dining hall choices will be necessary. Some colleges have a dietitian available to help with meal planning.
- Keep an adequate amount of healthy snacks available in your dorm room/apartment/house.

Nutritional Side Effects

- **Nausea and vomiting**- most common; associated with: eating too fast, drinking liquids while eating, not chewing foods thoroughly, or eating more than the pouch can comfortably hold. Nausea and vomiting can be triggered after trying new foods- allow a few days to pass before trying a new food again.
- **Dehydration**- avoid caffeinated beverages and meet daily fluid goals.
- **Constipation**- be sure to meet daily fluid goal and exercise regularly.
- **Diarrhea**- avoid high fiber and greasy fatty foods; fruit or vegetables with skin, limit milk products if experiencing lactose intolerance, avoid caffeinated beverages, and avoid concentrated sweets.
- **Dumping syndrome**- occurs when food passes too quickly from the stomach to the small intestine. Symptoms: nausea, uncomfortable fullness, cramping, diarrhea, weakness, fatigue, sweating, and fast heart rate. Avoid concentrated sweets.
- **Excess gas**- avoid excessive amounts of sugar alcohols such as: Mannitol, Sorbitol, Xylitol, Maltitol, Maltitol syrup, Galactitol, Erythritol, Inositol, Ribitol, Dithioerythritol, Dithiothreitol, and Glycerol. These can be found on the ingredients list of the Nutrition Label.

Nutritional Side Effects

- **Taste alterations**- may occur as a result of surgery.
- **Lactose intolerance**- Can cause cramping, bloating, and diarrhea. In order to prevent, you can take only lactase-treated milk/milk products, avoid milk/milk products, or try lactose-free milk or add lactaid to dairy products.
- **Hair loss**- may be due to low protein intake or low zinc levels. Typically occurs around 3-6 months after surgery. Let your doctor or dietitian know so labs can be checked and adjustments can be made.
- **Weight gain or limited weight loss**- preventable with patient compliance. What you eat, how often you eat, and how much you exercise play a role in your success.
- **Overeating**- preventable with patient compliance.
- **Loss of appetite**- frequently occurs and may last up to one year after surgery. It is important to learn to eat throughout the day if you are not hungry.