



PAEDIATRIC PATIENTS

Patient Lifestyle Education Materials



GLOBAL NASH/
MASH COUNCIL

Step into health: walk your way to a healthy liver

Reducing sitting & screen time

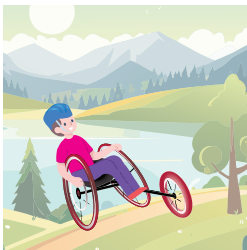


It is important to interrupt prolonged sitting time (every 45 minutes) with short bouts of exercise or activity: *2 - 3 minutes of stretches, 1 leg squats, & jumping*



Be as active as you can

EVERYDAY ACTIVITIES ALSO MAKE A DIFFERENCE!



HOBBIES CAN PROMOTE PHYSICAL ACTIVITY!

Exercise/activity

(Source: <https://www.cdc.gov/physicalactivity/basics/age-chart.html>)

Preschool Children (2-5 Years) And Family

- Physical activity every day, throughout the day, can be done through:
 - Enjoyable physical activities
 - Short bursts of a few minutes at a time
 - Group playing or exercise
- Be sure to drink water and not sugar sweetened beverages
- Examples: floor activities like gymnastics, Playing tag, tossing balls, tricycling, walking, Visiting the park, stair climbing

Children And Adolescents (6-17 Years)

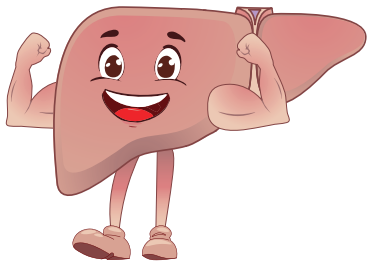
- ≥1 Hour/day of moderate to vigorous intensity physical activity
- Doing any amount of activity or exercise improves liver health
 - Vigorous activity such as walking, running and swimming
 - Strengthen muscle activity such as push-ups or climbing
 - Lifting light weights or exercise with a resistance band
 - Strengthen bones by running, jumping or doing gymnastics
- Be sure to drink water and not sugar sweetened beverages or sport drinks

The liver will be grateful

Physical Activity Improve Liver And Overall Health

- ✓ Reduction of liver fat independence of weight loss
- ✓ Improved liver enzymes
- ✓ Maintenance of weight loss
- ✓ Improved fitness and exercise tolerance
- ✓ Decreased belly fat

Please note that these are general recommendations and should not be considered a substitute for personalized advice from a professional



General lifestyle recommendation for patients with MASLD

Be active

- Make small changes to your daily routine, like using stairs instead of the elevator and walking from place to place
- Cut down on screen time to reduce sitting time
- Boost your physical activity
- Remember, every extra step you take counts!

Eat healthy

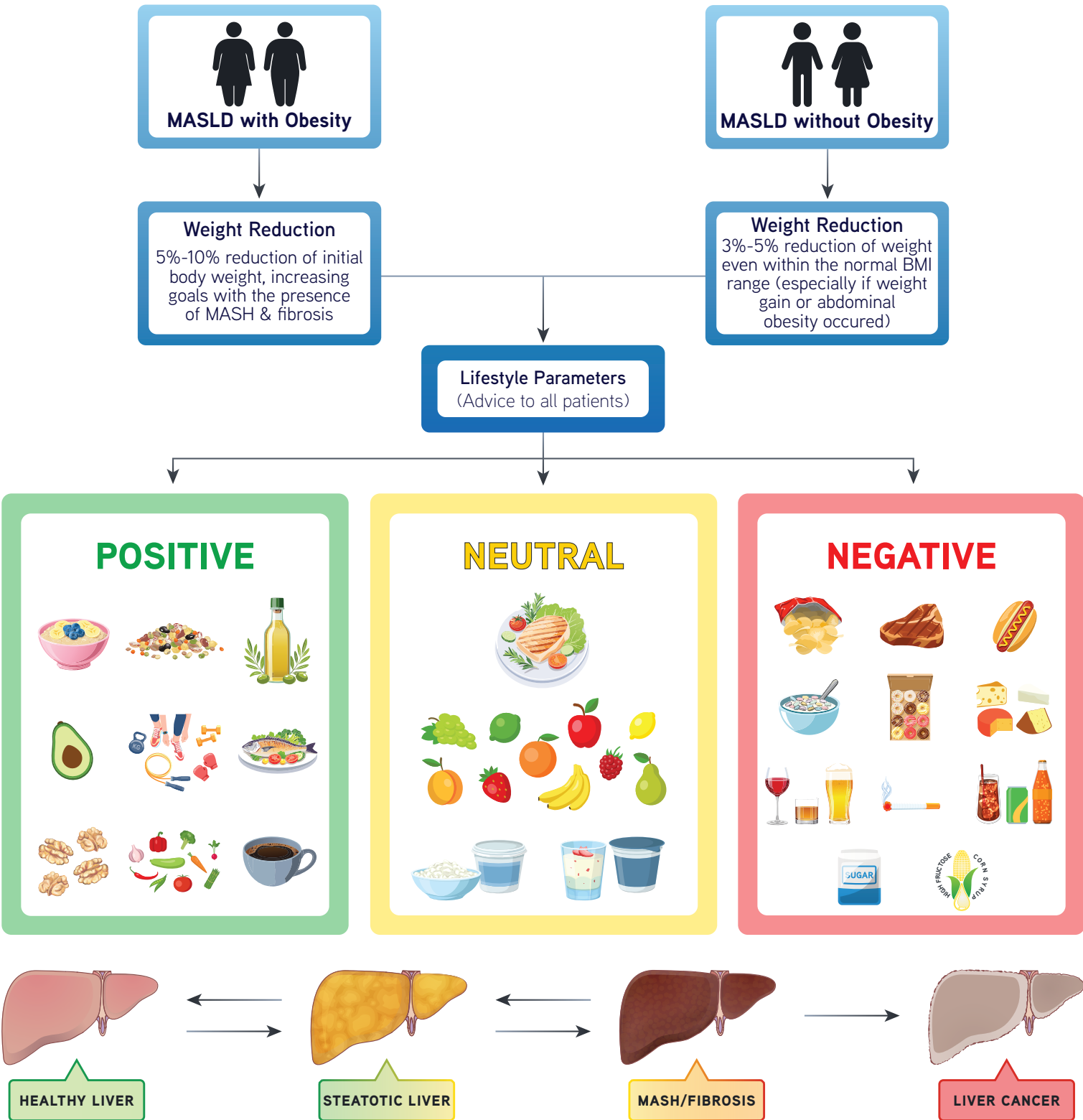
- Eat slowly, without screens
- Read carefully food labeling indicating the list of ingredients and the nutritional value. Select foods with a short ingredients list and with the fewest preservatives and additives
- Avoid ultra-processed food
- Avoid all types of sugar sweetened beverages

Get support

- Join structured diet and exercise programs with long-term support
- Set realistic and achievable goals for weight reduction and lifestyle change
- Seek advice from clinical dietitians and physical activity experts
- If necessary, consult with psychologists or behavior change experts for support
- Utilize digital health tools, such as apps tracking steps or meals, to enhance lifestyle adherence

Reduce stress levels

- Find time to do what you like and make you calm
- You can practice stress reduction techniques (breathing, mindfulness, etc)
- Try to sleep 7-8 hours/ night and avoid screens 2 hours before bedtime
- Avoid smoking or go to smoking cessation programs
- Avoid drinking alcohol



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Recommended nutritious grocery list

Vegetables (≥5 per person/day)

- Fresh, colorful vegetables
- Green leafy vegetables
- Frozen vegetables without additives



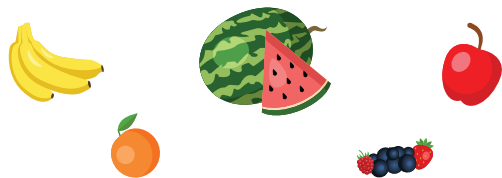
Beverages

- No need 😊, there is water at home
- You can buy carbonated water, coffee, tea, green tea, herbal infusions



Fruits (≤3 per person/day)

- Fresh, colorful fruits
- Berries
- Frozen fruits without additives



Unsaturated fats

- Olive oil
- Avocado
- Almonds, walnuts/pecans/Brazil nuts (up to 2 a day), hazelnuts
- Flax seeds chia/natural sunflower/pumpkin seeds
- Raw tahini
- Natural peanut butter



Protein

Vegetarian/vegan

- Legumes (dry, frozen): Lentils, dry peas, chickpeas, various beans (white/red/speckled, etc.), Soybeans, red beans, lupine
- Tofu, seitan, dried soy flakes without additives



Dairy products

- Cheese (up to 5% fat content)
- Natural bio yogurt (unsweetened, 1.5-5% fat)
- Milk (1%-3% fat)



Animal sources

- Fresh or frozen fish without additives
- Chicken, chicken breast, turkey, turkey breast
- Tuna in water or olive oil, sardines
- Eggs



Bread and cereal

- Whole grains: Quinoa, buckwheat, oats, basmati rice, bulgur, whole wheat pasta
- Rice noodles, bean noodles, pasta from legume flour
- Starchy vegetables: Sweet potato, corn, potato
- Whole wheat bread without preservatives
- Spelled flour/whole wheat flour/rye flour
- Chestnuts



Spices and herbs

- Crushed tomatoes/tomato paste without additives
- Lemon, vinegar
- Dry spices, e.g., paprika, turmeric, curry, cumin, cinnamon, pepper, nutmeg, thyme, oregano
- Fresh herbs, e.g., coriander, parsley, basil, mint, dill, oregano, thyme (consider growing them in a garden)
- Ginger



**YOUR CHOICES IN THE GROCERY AFFECT
YOUR FAMILY'S CONSUMPTION AND HEALTH!**

Family dietary pattern: nurturing health and harmony through family meals

Family meals are an essential keystone in shaping a healthy family environment. Besides the nutritional benefits, family meals have also been associated with improving children’s mental health, especially teens

Mental and well-being benefits

- A family meal contributes to unity, a positive atmosphere, and overall well-being. It is an opportunity for family discussion despite the busy day routine
- A family meal improves communication, family functioning, and a strengthened sense of belonging
- Studies have shown a correlation between frequent family meals, improved school performance, and reduced risk of risky behaviors in teenagers
- Collaborative meal preparation fosters teamwork on the one hand, and the division of responsibility between the family members encourages independence on the other hand
- The preparation itself (i.e., Cutting, kneading, measuring quantities) improves the fine motor skills of younger children

Martins CA. et al., *Appetite*, 2020

Utter J. et al., *Journal of Paediatrics and Child Health*, 2013

Nutritional benefits

- A family meal is an opportunity for the parents to model healthy eating habits and promote health. Of course, the fact that you eat together does not necessarily indicate the quality of the food, and you, the parents, should ensure that the food is healthy and varied
- A family meal is an opportunity for the parents to provide all the essential macro-nutrients: proteins, unsaturated fats, whole grains, and vegetables (see the “healthy plate”)
- A family meal creates a daily routine and eating schedule



Hammons AJ. Et al., *Paediatrics*, 2011

Dallacker M., et al. *Obesity reviews*, 2018

Practical tips to implement a family meal

- Plan one family meal this week; it doesn’t have to be dinner
- Share responsibilities between all family members to make things easier for you, the parents
- Plan meals in advance, involving your children when possible
- When asking your children about food choices, present two healthy options for them to choose from
- Enhance family meals with a conversation game, such as sharing a joyous moment or congratulating each other

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Ultra-processed food

Why are ultra-processed foods and drinks bad for us?

- Ultra-processed foods (UPF) and drinks are common in Western diets
- They have low nutritional value, contain additives, and go through many processes to become the final product
- They often have high amounts of unhealthy ingredients like saturated fats, high-fructose corn syrup, additives, and preservatives
- In their package, there are some harmful plastics like endocrine-disrupting chemicals (EDCs)

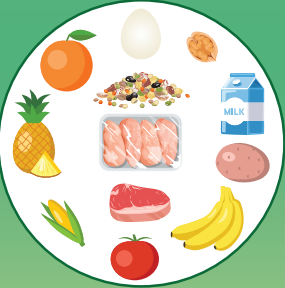


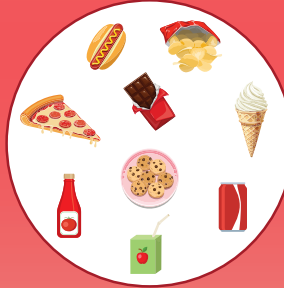
Grinshpan LS. et al., *JHEP Reports*, 2024

What is the practical way to identify if a product is ultra-processed?

UPF contains characteristic ingredients of no or rare culinary use in your kitchen, for example:

- Hydrolyzed proteins
- Fructose, high-fructose corn syrup
- Hydrogenated oil
- “Cosmetic additives”- flavors, colors, emulsifiers
- Palm oil
- UPF tends to be high in energy, salt, sugars (mainly fructose or high fructose corn syrup), and fat (in particular saturated fatty acids), with low nutritional value
- UPF is usually very easy to use, ready to eat/heat, durable, and hyper-palatable
- UPF is packed in plastics and cans
- Usually, UPF contains more than 5 ingredients

Oliveira P., *Frontiers in Nutrition*, 2022

NOVA Food Classification			
UNPROCESSED OR MINIMALLY PROCESSED FOODS	PROCESSED CULINARY INGREDIENTS	PROCESSED FOODS	ULTRA-PROCESSED FOODS
<p>Foods which did not undergo processing or underwent minimal processing techniques, such as fractioning, grinding, pasteurization & others</p> 	<p>These are obtained from minimally processed food & used to season, cook, & create culinary dishes</p> 	<p>These are unprocessed or minimally processed foods or culinary dishes which have been added processed culinary ingredients. They are necessarily industrialized</p> 	<p>These are food products derived from foods or parts of foods, being added cosmetic food additives not used in culinary</p> 
Legumes, vegetables, fruits, starchy roots & tubers, grains, nuts, beef, eggs, chicken, & milk	Salt, sugar, vegetable oils, butter & other fats	Bottled vegetables or meat in salt solution, fruits in syrup or candied, bread, cheeses, purées or pastes	Cookies, ice cream, shakes, ready-to-eat meals, soft drinks & other sugary drinks, hamburgers, & nuggets

Practical recommendation to reduce UPF consumption

- Drink water instead of sugary drinks
- Check food labels; choose items with shorter ingredient lists
- Include more unprocessed foods in meals and snacks (like veggies, fruits, yogurt, nuts, and eggs)
- Consider baking or buying homemade bread and pastries
- Cut down on processed snacks and sweets
- Cut down on processed meat (sausages, pastrami, salami, hamburger)

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Your journey with MASLD

1 Assessing your readiness to change

On a scale of 0 (not prepared at all) to 10 (already changing), where are you now in terms of your preparation to make a change in your lifestyle to lower the burden of your condition?



2 Your health and the infodemic



What is the infodemic?

It is too much information, including misleading information, that can cause confusion and harm people's health

On the Internet and social media, false and misleading information tends to spread very quickly

There are many "Herbal and Dietary Supplements" that can cause liver damage
Before consuming them, we recommend consulting with your hepatologist or nutritionist



SEEING IS NOT ALWAYS BELIEVING!

DO NOT believe all the online information, as it is not always true!
Check the reliability of your information source

DON'T

- Believe everything that you read on the Internet
- Follow accounts of self-claimed experts for health advice
- Buy products proclaimed as "miracle cures" for your condition
- Make decisions on your health based only on information you find online

DO

- Check that the information is derived from a reliable source such as a government website or scientific paper
- Follow accounts from established organizations (e.g., WHO, AHA, etc.)
- Consult with your doctor about information you find on the Internet

STILL UNSURE WHETHER TO TRUST INFORMATION FROM AN ONLINE SOURCE?
Check the advice offered by the World Health Organization through this QR code



Recommended physical activities

Games and simple activities

For youth

- Playing tag, playground equipment, four square, obstacle course, playing catch with ball or playing frisbee, hula hooping, hopscotch, climbing, other group sports



For adults

- Badminton, pickleball, golf, yard work and gardening, active home projects (painting, remodeling, organizing), volunteering, hiking, geocaching, other group sports



Resistance activities

For all (body weight)*

- Upper body: push ups, pull ups, shoulder taps
- Lower body: squat, lunge, glute bridge, step up, calf raise
- Core: sit-ups, plank variations, side bends
- Yoga and pilates**



For all (can add resistance band or use light weights)

- Upper body: bicep curls, triceps extensions, lateral/front raises, chest press, seated or bent-over rows, band pull a-parts
- Lower body: clamshells, lateral band walks, leg press, romanian deadlift, hamstring curls, leg extensions

**Can also be done with a resistance band or free weights*

***Yoga and pilates have strong flexibility components as well*



Aerobic activities

For youth

- Skipping, running, gymnastics, jogging, swimming, dancing, jumping rope or trampoline jumping



For adults

- Brisk walking, running or jogging, cycling, elliptical, swimming, dancing, kickboxing, interval/circuit training



Other ways to boost activity levels

For all

- Using walking or cycling as a mode of active transportation
- Parking farther away from your destination
- Using the stairs rather than an elevator
- Take walking breaks and stand more often
- Play with your pets



Flexibility activities

For all

- Upper body: chest, shoulder, and triceps stretches
- Lower body: hamstring, quadriceps, and calf stretches
- Total body flexibility: child's pose, cat-cow, prone cobra



REMEMBER THAT EVEN SHORT BOUTS OF ACTIVITY CAN GO A LONG WAY!

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Recommended adapted physical activities

Games and simple activities

For youth

- Many activities can be played by wheelchair users
- Throwing balls, field games, racquet sports

For adults

- Various sports can be played by wheelchair users
- Strengthening exercises and functional activities (such as sit-to-stand and forward reaching) can be done sitting
- Resistance bands can also be used



Flexibility activities

For all (can use resistance bands)

- Upper body: chest, shoulder, and triceps stretches
- Lower body: hamstring, quadricep, and calf stretches
- Total body flexibility: child's pose, cat-cow, prone cobra



Aerobic activities

For youth

- Swimming and floor activity with yoga and stretching



For adults

- Supported walking with cane/walker etc, bicycle ergometer, elliptical, swimming, or water aerobics



Resistance activities

For all (body weight)*

- Upper body: partial push ups on knees
- Lower body: glute bridge on bed, step *in place*, calf raise while seated
- Core: sit-ups, plank variations, side bends
- Yoga and pilates**



For all (can add resistance band or use light weights)

- Upper body: bicep curls, tricep extensions, lateral/front raises, chest press, seated or bent-over rows, band pull apart
- Lower body: clamshells, lateral band walks, leg press, romanian deadlift, hamstring curls, leg extensions



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