

A BRIEF SUMMARY

What You Should Know About Liver Transplant



Table of Contents

• Your Liver Transplant Team	1
• Pre-Transplant Evaluation Appointment	3
• Transplant Evaluation Testing	3
• Liver Transplant Evaluation Committee	4
• Patient and Family Education Class	5
• Listing	5
• When the Call Comes	7
• Living Liver Donation	7
• Living Liver Donor Facts	9
• Financial Information	10
• Nutrition Goal Before Transplant	13
• Nutrition Goals After Transplant	14
• After My Transplant	17
• Who Do I Contact if I Have Questions?.	19
• University of Michigan Health Patient Portal (MyUofMHealth.org).	20
• Parking and Getting to Appointments	21
• Lodging	22
• Transplant-related Websites.	22
• MLabs Blood Drawing Locations	24
• Tobacco Cessation Policy.	26
• Policy on Substance Use.	29

For detailed information, please refer to the Liver Transplant Program Education Guide at **UofMHealth.org/conditions-treatments/transplant/liver-transplant-patient-care-guide** or talk with your transplant coordinator.

***Disclaimer:** This document contains information and/or instructional materials developed by University of Michigan Health for the typical patient with your condition. It may include links to online content that was not created by University of Michigan Health and for which University of Michigan Health does not assume responsibility. It does not replace medical advice from your health care provider because your experience may differ from that of the typical patient. Talk to your health care provider if you have any questions about this document, your condition or your treatment plan.*

Your Liver Transplant Team

Transplant Nurse Coordinator

A registered nurse who specializes in liver disease and patients needing transplantation. A pre-transplant nurse coordinator helps the team in the evaluation, education and pre-transplant care of the patient. A pre-transplant nurse maintains patient medical information, monitors labs and medications, and works closely with the transplant doctor on patient care issues. They are responsible for managing your case to ensure each detail for clearance to transplant has been reviewed and approved. They are the primary communication link between you and your providers before transplantation.

Hepatologist

A doctor who is an expert in liver disease. Your hepatologist is responsible for determining your medical need for a transplant, managing your medical needs before transplant and managing your medical care following transplant.

Transplant Surgeon

A doctor who performs the liver transplant surgery. Your surgeon is responsible for evaluating your medical condition in preparation for transplant surgery, discussing the transplant with you, performing the surgery and providing post-operative care for a defined period following surgery. Since the surgeons on the transplant team have a rotating schedule, the surgeon who performs your surgery may not be the same surgeon you see during the inpatient stay or at clinic visits.

Post-Transplant Nurse

A registered nurse (RN) who specializes in liver disease, and more specifically, in patients after transplantation. A post-transplant nurse assists the team in providing post-transplant care to the patient. A post-transplant nurse maintains medical information, monitor labs and medications, and works closely with the surgeon and the hepatologist on patient care issues.

Transplant Advanced Practice Provider

Advanced practice providers include physician assistants (PA) and nurse practitioners (NP) who work closely with the hepatologists and transplant surgeons to provide medical care to patients before and after transplant. They may be involved in the initial diagnosis of your liver disease, the transplant evaluation and the management of active medical problems and/or medication adjustments.

Transplant Social Worker

A professional who helps patients and their families understand and cope with a variety of problems (such as emotional, family, financial, job/work) associated with liver disease and the transplant process. Social workers provide ongoing education and support throughout the transplant process and beyond.

Financial Coordinator

Financial coordinators work with patients and their families to help them understand the various financial aspects of transplantation. They work with your insurance carrier to verify coverage, help in obtaining prior authorization for transplant services and work with patients with limited insurance coverage to explore other funding opportunities.

Clinical Research

The Clinical Research team manages the clinical research studies designed to improve the understanding of transplantation and enhance the outcomes for all patients. Research staff responsibilities include identifying eligible patients, informing patients about research options, enrolling patients in research studies, collecting research data and coordinating research care. The research team works closely with the clinical team to provide patients access to cutting-edge therapies before they are available everywhere.

Transplant Pharmacist

A pharmacist who has knowledge, training and experience in transplant medication. Transplant pharmacists are available to work with you, your family and the rest of the transplant team in managing your transplant medications during your entire transplant journey.

Registered Dietitian

A dietitian will work with you to determine your current nutritional status and then will provide education regarding nutritional needs, restrictions and supplements that may be necessary to keep you as healthy as possible, before and after the transplant.

Transplant Unit Staff Nurse

Unit staff nurses work closely with the patient during the transplant inpatient stay. They are responsible for providing patient care, education, and training on tests, medications and follow-up care. Since unit nurses work as a team on a rotating schedule, you may have several nurses during your inpatient stay.

Primary Care Physician (PCP) or Family Physician

A primary care physician is a title used by insurance companies to identify the doctor who is responsible for providing your general medical care and authorizing patient referrals for specialty care. If you do not have a managed care insurance policy, the term “family physician” would be more appropriate.

Liver Transplants at University of Michigan Hospital

University of Michigan Health is a national leader in liver transplantation, as well as the surgical and medical management of patients with liver disease. Since 1985, our physicians and staff have provided care to more than 2,700 adult and pediatric liver transplant recipients. At University of Michigan Health, state-of-the-art equipment and facilities ensure the highest quality care for patients. Electronic records are continually updated, meaning patient records are available to caregivers 24 hours a day, seven days a week. This system also allows for the tracking of all outside lab work and diagnostic studies for each patient. **MyUofMHealth.org** allows patients to review test results, request prescriptions, request clinic visits and send non-urgent messages to their health team.



Pre-Transplant Evaluation Appointment

A liver evaluation appointment involves a series of visits with several doctors and other members of the transplant team, generally all occurring on the same day.

During the evaluation appointment, you will see the medical liver specialist or hepatologist first. If your medical condition indicates a liver transplant would be appropriate, you will meet with several other members of the transplant team. Team members you are likely to see on evaluation day include a transplant coordinator, social worker, transplant nurse, transplant surgeon, financial coordinator and dietitian.

Transplant Evaluation Testing

The extensive evaluation testing is required to assess whether you are an appropriate candidate for liver transplant. Many of the initial tests are ordered on evaluation day, but are often scheduled on other dates.

Testing is important to the transplant committee as it provides information regarding your medical status that is used to help determine your eligibility. Testing also helps assess whether you have other medical issues which would impact the outcome of transplantation. These include significant heart disease, lung disease, kidney disease or liver cancer which may be too advanced for transplant consideration.

You will be given written orders for the tests you need. (Tests done at University of Michigan Health are entered electronically and do not require written orders). You also will receive instructions for completing the testing through your doctor and/or dentist. As testing is completed, the results need to be faxed to the transplant coordinator at the fax number below. Occasionally, transplant physicians will require some testing be performed at University of Michigan Health. You will be advised when that is required.

Other testing may be ordered by the transplant team if there are abnormalities in your initial testing, or if the team needs further information to determine whether you are an appropriate liver transplant candidate. These tests can include pulmonary function tests, additional blood work, CT scan/MRI, heart catheterization, etc. If any of these tests are recommended, you will be given the information regarding the test before the appointment is made.

Reports from tests done outside University of Michigan Health should be mailed or faxed to:

Transplant Center, Liver Program
University of Michigan Health
1500 East Medical Center Drive, SPC 5244
Room F6511A
Ann Arbor, MI 48109
(800) 333-9013
(734) 998-2384 Fax

No patient will be put on the transplantation list until all tests are completed and the results confirm that liver transplant is appropriate. Therefore, please make sure all tests are completed and results are sent to the transplant office as soon as possible.

Liver Transplant Evaluation Committee

Patient cases are discussed at the weekly Liver Transplant Evaluation meeting. Medical history, as well as personal and family histories, and insurance and support systems are all reviewed. All of the committee members review each patient's case and test results to determine whether there are any issues which need to be further addressed before the patient can be placed on the liver transplant list.

There are three decisions that may be made regarding a patient by the Liver Transplant Evaluation committee:

- The patient meets the criteria and is approved to be listed.
- The patient does not meet the criteria and cannot be listed.
- More information or testing is needed to make the determination, and the decision is deferred until the information can be obtained.

If it is determined that you are an appropriate candidate for placement on the transplant list, you have completed all of the required tests and have received authorization from your insurance company, you are then listed for liver transplant. After the transplant evaluation meeting, you and your referring doctors will receive a letter about the Transplant Evaluation committee's decision.

Patient and Family Education Class

The Liver Transplant Patient Education class is designed to provide you and your caregivers with an overview of the entire liver transplant experience. **All liver transplant patients are required to attend with their intended caregivers before being listed for a transplant.** At times, the class may be offered virtually (such as during the COVID-19 pandemic). When that is the case, copies of the slide presentations are sent to families prior to the class.

Listing

Getting Listed

All potential transplant cases are presented at the Liver Transplant Evaluation meeting at which time the patient's medical condition and social history are discussed. Committee members review each case to determine whether there are issues which need to be addressed further before you can be placed on the wait list for a liver. To be listed:

- You must attend the Patient Education class (virtual or live).
- The Transplant Evaluation committee has determined you are an appropriate candidate.
- You have completed all the requested testing.
- Your insurance company has authorized you to have the transplant at University of Michigan Health.

Communication

It is important to communicate with the transplant team after being listed. You should notify the team of any changes in your health, as well as financial or insurance changes.

On Hold

Patients who are listed for transplant can be given a status of “on hold” which makes the patient inactive on the list. The patient is still listed for transplant however will not receive organ offers while “on hold”. There are several reasons to be place “on hold” such as changes in your medical condition, financial changes, social issues or your medical condition has improved.

Off the List

Patients may be removed from the transplant waiting list for several reasons:

- Complications
- Non-adherence to substance abuse policy
- Non-adherence to medications regimens, clinic appointments and lab tests
- Liver disease improves

Substance Abuse Policy

All patients are required to abstain from the use of alcohol, tobacco, marijuana and illegal drugs, and will be required to sign our policy form confirming their commitment to this policy. (See Substance Abuse Policy on page 29.)

Where and Who to Call – Before Transplant

It is extremely important for the patient to notify the liver transplant team of any issues or problems that happen while waiting for a liver transplant. Please contact us at **(800) 333-9013**.

Getting a Liver

The MELD system was created to allocate livers to all patients listed in a consistent manner that provides livers to those patients who are at the greatest risk of dying before transplant. The system is complex as there are many factors in determining to whom an organ will be offered. **Patients are encouraged not to focus too much attention on their MELD score.**

When the Call Comes

The call advising of an available liver can come at any time. The first notification is made to the transplant coordinator who works in collaboration with the surgeon.

Time Considerations

- Coordination of organ retrieval
- Organ preservation time
- Coordination of recipient operation
- Adequate travel time for patient to drive safely



When You Get to University of Michigan Health for Transplant

Follow instructions given to you over the phone by the transplant coordinator.

Living Liver Donation

Living donation provides an opportunity for a recipient to receive a portion of a liver from a live person.

What are the Advantages of Living Donation Over Non-living Donation?

Living donor liver transplants have many advantages. The primary advantage of living donation is that the transplant can be done sooner, before the recipient becomes too sick. The healthier a person is before surgery, the better the chances for a good outcome. Recipients of living donor transplants have excellent long-term outcomes after transplant. Living donor transplant can also allow families to schedule and prepare for the surgery and recovery afterwards.

What are the Qualifications to be a Living Donor?

To be a living donor, a person must be in good general health, physically fit and free from diabetes, cancer and heart disease. People considered for living liver donation at University of Michigan Health must be between the ages of 21 and 55. The living donor must first undergo a blood test to determine blood type compatibility with the recipient. If compatible, the donor undergoes a medical history review and a complete physical and psychosocial examination. The decision to become a living donor is a voluntary one, and the donor may change his or her mind at any time during the process. The donor's decision and reasons are kept confidential.

What are the Costs Related to Living Donation?

The medical costs associated with evaluating a living donor are covered by University of Michigan Health. The donor will not have to pay for any expenses associated with the evaluation, surgical procedure, follow-up or any related complications. Living donors may be eligible for financial assistance through the National Living Donor Assistance Program. This federally funded program covers the cost of travel, lodging and meals associated with the donor evaluation, surgery and follow-up appointments.

Will Living Donors Be Entitled to Disability Pay?

If a living donor's job provides disability insurance coverage, he/she will most likely be entitled to disability pay. Living donors should check with their employer.

Will Donating a Liver Prevent You from Becoming Pregnant or Fathering a Child?

No. Living donation does not have any impact on fertility.

Should Living Donors Stop Smoking Before Surgery?

People must stop smoking to be a donor, even if they are light smokers. Smokers have an increased risk of complications with any surgery.

Should Living Donors Stop Drinking Alcohol?

To be a liver donor, a person must stop drinking all alcohol before the surgery. If a donor has a history of heavy alcohol use, it is very important to tell the doctors. Donors should not return to drinking alcohol until six months after surgery.

Should Living Donors Stop Taking Medication(s) Before the Evaluation or the Surgery?

Do not stop any prescription medication unless advised to do so by a doctor. Be sure to tell the transplant doctor and team about all prescription and over-the-counter medications currently taken.

Will Living Donors Need Someone to Come With Them to Their Donor Evaluation Appointment?

Yes, a care partner is required for the donor evaluation appointments. The care partner is the person donors choose to support them through the process of living liver donation. This person will also be responsible for helping to care for the donor after surgery.

How Long Will It Take for a Living Donor to Recover?

A donor is typically hospitalized for five to seven days after the surgery. The recovery time varies from four to 12 weeks depending on the type of work and activity of the donor.

Living Liver Donor Eligibility

- Age 21-55
- No major medical problems
- No significant mental illness or substance abuse
- Anatomic considerations of donor and recipient
- BMI < 35 – Donors who are interested in a structured weight-loss program to facilitate donation may be offered consultation with a registered dietitian.

Living Donor Contact Information

Potential living donors can contact the University of Michigan Health Transplant Center at **(800) 333-9013** or **TXP-Donors@med.umich.edu** to speak with a living donor coordinator or submit contact information online at **UofMHealth.org/transplant**.

Living Liver Donor Facts

Compatibility

All living liver donors must have a compatible blood type with the intended recipient.

Resources for Living Liver Donation

- **Youtube.com/watch?v=itIBtkQACiI** – YouTube video: Living Donation in Liver Transplantation by Dr. Benjamin Samstein (8 minutes, 14 seconds)
- **UofMHealth.org/conditions-treatments/transplant/liver-transplant** – University of Michigan Health Transplant Center website
- **WeAreTransplant.com** – We are Transplant
- **ustransplant.org** – Supporting the transplant community
- **unos.org** – United Network for Organ Sharing (UNOS)



Steps to Living Liver Donation

- Contact the Living Donor office at **(800) 333-9013** or **TXP-DONORS@med.umich.edu** to complete initial intake and determine eligibility.
- Review any records (if requested) to determine if donor is eligible to proceed with evaluation.
- Obtain verification of blood type and liver function blood test.
- Complete a formal evaluation. This may consist of a few appointments at University of Michigan Health.
- Complete cancer screening according to the American Cancer Society Guidelines. **This is considered general health maintenance and should be covered by the donor's insurance.**

Financial Perspective

Medical expenses related to living donation evaluation process for living donors are covered by the Transplant Center. However, we are unable to reimburse donors for lost wages, traveling or lodging costs. The National Living Donor Assistance Program is a Federally funded program that may provide assistance with these costs. Please visit **LivingDonorAssistance.org/documents/NLDAC_Program_Brochure.pdf** for more information.

Post-Donation and Recovery

Donors are generally discharged from the hospital within three to six days after surgery. The expected recovery time varies, with the average recovery time being six weeks. About 50 percent of donors return to work at four weeks after donation, 75 percent of donors return to work at eight weeks after donation, and nearly 100 percent of donors return to work by 12 weeks after donation. This depends on the type of employment and lifestyle the donor is returning to, as well as individual recovery process. A two-week post-operative appointment will be scheduled at University of Michigan Health to determine expected clearance to return to daily activities.

Financial Information

It is important to update your financial coordinator with any insurance changes while waiting for transplant. Notifying the registration staff is not enough as it is possible for information to be updated in the main system before our transplant system. Your coordinator is determined by the first letter of your last name.

- A-J..... Anne Rieder**(734) 647-0953.....amrieder@med.umich.edu**
- K-Z..... Frankie Mautone**(734) 232-9984.....fmhall@med.umich.edu**

Call to your financial coordinator to confirm that we have your most current insurance on file.

When Should I Call My Financial Coordinator?

- If your health coverage changes, your financial coordinator will need to confirm your new health plan participates with our Transplant Center.
- If your current employer coverage changed to COBRA
- If you lose your health or prescription coverage

When insurance changes, new authorization may be needed for your pending transplant. If that is not done before transplant, you are at risk of not having coverage when you need it the most. Sometimes there are contract or network issues that come up when insurance changes. These changes may affect your ability to remain with our Transplant Center.

What Should I Do During Open Enrollment or if My Insurance Changes?

Each year employer groups, Medicare and Medicaid offer people a chance to change their insurance coverage. University of Michigan Health participates with most health plans but not all. A change in coverage may affect your ability to stay with our Transplant Center.

Call your financial coordinator **before** you make a change to be sure the plan you choose will work with University of Michigan Health. Also, call your coordinator **after** any changes occur; new transplant authorization may be needed.

Whenever possible, avoid Medicare advantage plans and Medicare HMOs. Monthly premiums for these plans may appear to be less expensive for separate Part B, supplement and drug plans, but deductibles, copays and/or networking issues may end up costing you much more.

What if I Don't Have Enough Coverage or am Worried About the Future?

Even with ideal medical and prescription coverage at the time of transplant, there is no guarantee that it will always be available. There may be additional expenses after transplant such as frequent travel to and from the Transplant Center, additional prescription copays and possible lodging expenses.

If you have concerns about managing your current or future medical/prescription costs, we recommend fundraising. Contact one of the organizations listed below for more information.

- HelpHopeLive..... (800) 642-8399 **HelpHopeLive.org**
- National Foundation for Transplants..... (800) 489-3863 **Transplants.org**
- Children's Organ Transplant Association (800) 366-2682 **Cota.org**

Each of these organizations work exclusively with people who need transplants. They are familiar with the challenges you face and goals you may want to set. All money raised is held by them and protected from being considered a taxable income or asset. This is important to anyone receiving assistance through Medicaid or other low-income programs.

Medicaid

Michigan Medicaid may be an option for you if you meet certain income requirements. For further information and an online application, please visit [MIBridges.michigan.gov/access/accessController?id=0.7691187720935347](https://mibridges.michigan.gov/access/accessController?id=0.7691187720935347).

MSupport

MSupport is a program offered by University of Michigan Health for those who meet income requirements. This is a short-term plan that can help cover medical expenses at University of Michigan Health. This can help some people while they look for new coverage. This alone will NOT cover transplant. It can assist with Medicaid spenddowns or high out-of-pocket costs.

Visit [Med.Umich.edu/pdf/finance/MSupport_Application.pdf](https://med.umich.edu/pdf/finance/MSupport_Application.pdf) for more information or to print the application. You may also contact MSupport directly at (855) 853-5380.

Patient Financial Counselors

If you are interested in purchasing individual or family insurance plans through the Marketplace, you can get more information from our Patient Financial Counselors at (877) 326-9155 or by visiting UofMHealth.org/patient-visitor-guide/newoptions.



Extra Help (Medicare Rx Drug Cost)

If you have Medicare, you may qualify for something called “Extra Help”. This is a low income subsidy that helps patients with Medicare Part D out-of-pocket cost and premiums. Please visit <https://secure.ssa.gov/i1020/start> for an application, or call (800) 772-1213.

What Do I Need to Remember?

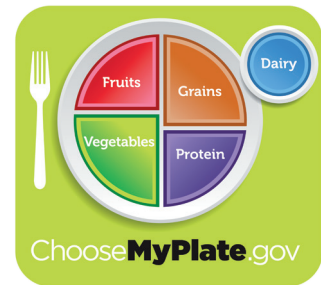
Medical coverage and your ability to handle the expense is vital to the success of your transplant. When changes happen, it is very important to notify us.

To help ensure the success of your pending transplant, start with frequent communication with your financial coordinator. They may not be able to resolve all issues, but being aware of them is key to finding a solution.

Nutrition Goals Before Transplant

General Nutrition

It is important to stay as healthy as possible before transplant. Symptoms of your liver disease may make it difficult to consume enough nutrients and change your body's normal way of using nutrients. Here are some healthy lifestyle tips:



- Liver disease often increases calorie and protein needs. Aim to eat at least three meals and two snacks per day, or four to six smaller meals if feeling full quickly after eating.
- Try to follow the MyPlate guide for every meal (see graphic above).
- Follow a Mediterranean-style diet with lean proteins, low-fat dairy, whole grains, fruits, vegetables and healthy fats.
- Include a protein source with every meal and snack (including your bedtime snack).
- Nutritional supplements along with high-calorie foods (such as olive oil, butter, whole fat dairy, avocados and nuts) can help meet calorie needs.
- Avoid foods that may cause foodborne illness such as unpasteurized or undercooked foods.
- Prevent vitamin and mineral deficiencies. It may be recommended to take a multivitamin.
- Stay as active as possible by including daily exercise.

Weight Loss

Obesity may be a contraindication for liver transplant. If you have been instructed to lose weight, the following are recommended for you:

- Follow the MyPlate guide for every meal as mentioned above.
- Follow a Mediterranean-style diet (see graphic above).
- Use a smaller plate at meals to help with portion control and limit unnecessary snacking.
- Limit added sugar in the diet such as pop, juice and sweets.
- Include physical activity

Fluid Retention

Sodium in the diet encourages the body to retain water. This is known as ascites or edema. The fluid may gather in the feet, legs, abdomen or other body tissues. A low-sodium diet can lower fluid buildup and help you feel better. Here are some tips and facts:

- Almost all foods naturally contain some sodium. The amount found in unsalted food is adequate to meet your body's needs.
- One teaspoon of salt contains 2,300mg of sodium. Limit your sodium intake to no more than 2,000mg (2 grams) per day.
- Read the nutrition labels on all foods and drinks to look for sodium content. It will be labeled in milligrams (mg).
- Avoid any form of added salt.
- Avoid salt substitutes such as No-Salt[®] and Nu-Salt[®]. These still contain sodium and are very high in potassium which can affect your diuretics.
- Limit eating out as much as possible.
- Hidden sodium sources may be softened water, bottled water and some medications (such as antacids, laxatives and antibiotics).

Nutrition Goals After Transplant

General Nutrition

After surgery, your body will need enough calories and protein to help with healing. Some patients are able to eat well soon after surgery while others take some time. Here are some tips to ensure proper nutrition as you advance to a regular diet:

- Eat regularly throughout the day. Either three meals and two snacks, or four-six smaller meals, whichever your body can handle. Avoid skipping meals.
- Include a protein source with every meal and snack.
- Include high-calorie foods or nutritional supplements if your appetite is poor and you need to increase calories.
- Once you have fully healed from surgery, follow healthy eating and exercise habits to maintain a healthful weight. A Mediterranean-style diet is recommended.
- If you are struggling with fluid accumulation, continue a low-sodium diet of 2,000mg (2 grams) per day.

Liver transplant patients should have their cholesterol/lipids checked yearly as they are more likely to develop high cholesterol. Patients are encouraged to keep their cholesterol and lipids under control by:

- Controlling weight with healthy eating and exercise
- Use of cholesterol and lipid medications as prescribed by your doctor
- Smoking cessation

Hyperglycemia

Steroids may elevate blood sugar and can lead to steroid-induced diabetes. Whether your blood sugar is elevated for this reason, or you previously had diabetes, here are some tips:

- Carbohydrates are found in grains, starches, fruit, starchy vegetables, beans, dairy and sweets.
- Limit high-carbohydrate foods. They are an important source of nutrition, but eating too many at once can cause high blood sugars.
- Consume well-balanced meals that include protein, starch, fruit and vegetables.
- Try to eat the same amount of carbohydrates at each meal.
- Avoid skipping meals.
- Don't drink your carbohydrates. Sugary beverages can increase your blood sugar without providing much nourishment. Limit any sweetened beverage to no more than four ounces per day.

Nutrient Imbalances

Some post-transplant medications may cause mineral imbalances specifically in potassium, magnesium, phosphorus and calcium. Potassium can often be elevated while magnesium and phosphorus are depleted. Long-term use of steroids can lead to bone loss. Be sure to limit or include foods containing these nutrients as needed.

Food Safety

It will be very important to follow good food safety practices to prevent food borne illness. Post-transplant patients are at risk for this type of illness due to taking immunosuppressant medications. Your risk is highest one to six months after transplantation. The following is recommended:

- Avoid cross contamination. Keep raw and ready-to-eat foods separate.
- Frequently wash your hands and counter space.

- Be sure food is being stored at safe temperatures. The refrigerator should be kept at 40°F or below, and the freezer at 0°F or below.
- Avoid using food past their expiration dates.
- Avoid purchasing dented or bulging cans, or jars that are cracked or have unsealed lids.
- Open cartons of eggs and do not buy if any are broken or cracked.
- Avoid unpasteurized foods and sprouts.
- Do not eat any raw or undercooked meats, poultry, seafood or eggs.
- Avoid salad bars and buffets.
- Wash fruits and vegetables.
- Well water should be tested periodically for contamination.
- Use refrigerated leftovers within two days.
- Meat, poultry and seafood need to stay cold while they thaw. Thaw using one of the following methods:
 - In the refrigerator – one to two days before cooking
 - In the microwave – use the defrost setting and then cook right away
- Use a meat thermometer to make sure the proper internal temperature is reached.

Drug-Nutrient Interactions

The following should be avoided due to interference with certain post-transplant medications:

- Grapefruit
- Papaya
- Pomegranate
- Pomelo
- Starfruit
- St. John's Wort

Please let the transplant team know of any supplements you are taking.

While following a diet specific for liver disease, keep in mind any other diet restrictions that have been advised by your doctor or dietitian. Following the transplant, a dietitian can help create a diet plan that meets all of your needs. Do not hesitate to contact the transplant dietitian with any questions at **(734) 936-8273**.

After My Liver Transplant

Contact Information

If you have questions after discharge, please call our clinic during business hours (Monday thru Friday 8:00 a.m. to 4:30 p.m.) at **(800) 333-9013**. After business hours, or on holidays and weekends, please call the hospital operator at **(734) 936-4000** and ask for the liver transplant on-call physician. For non-urgent needs we strongly urge you to use the patient portal for contact with your transplant team. In some cases, you may get a quicker response. The portal should **not** be used for urgent matters. You should call the clinic and speak to your nurse. (See page 20 for patient portal information.)

You Should Know

The portal should not be used for urgent matters. You should call the clinic and speak to your nurse.

Social Support Plan

Friends and family need to be ready to provide support during your transplant recovery. Their hands-on help and emotional support is very important. Your caregivers will support you during your recovery by learning your new medications along with you, helping at home after discharge and driving you to clinic visits and the lab when you cannot drive. Social work is available to help you and your caregivers as you adjust to lifestyle changes as a new transplant patient.

Medication Schedule

Transplant patients start taking many new medicines after surgery. You will learn about your medicines and begin taking them in the hospital according to a personalized schedule. It is very important to never stop taking your transplant medicines. Skipping or decreasing doses of any medicine may cause harm to your new liver. If you have problems paying for or getting your medicines, please call the Transplant Center at **(800) 333-9013** so we can help you. Plan ahead so you always have your transplant medicines available when you need to take them.

What Medication Will I be Taking?

There are three classes of medicine that you will be taking:

- **Anti-rejection Medicines** – Also called immunosuppressive, these weaken your own immune system without eliminating it. Immediately after transplant, you will start taking a combination of anti-rejection medicines. Tacrolimus, mycophenolate and prednisone are most commonly used. Each medicine works differently in the body to prevent rejection of the liver.

- **Anti-infective Medicines** – These are usually only taken for the first one to six months after transplant because you will be at high risk for infection due to having a decreased immune system. Since you take anti-rejection medicines that lower the resistance to fight infections, some medicines are given to help prevent infections.
- **General Maintenance Medicines** – You may need to continue some medicines to treat your other medical conditions that are not related to liver failure. You may need to start new medicines to treat the side effects of the anti-rejection medicines. Some examples of side effects include diabetes, high blood pressure and chronic kidney disease.

The success of your liver transplant depends on you taking the correct dose of the anti-rejection medicines as prescribed. You and your caregiver will be expected to pass a quiz on the medicines before being released from the hospital. For refills, it is important to call your transplant nurse at least two weeks before your medication runs out.

Transplant Specialty Pharmacy

University of Michigan Health has a Transplant Specialty Pharmacy whose only focus is to serve transplant patients, ensuring they have ongoing and timely access to their medications. The specialty pharmacy offers financial counseling and support services to help transplant patients navigate any difficulties with insurance coverage. They can answer questions regarding medication regimens and side effects. The Transplant Pharmacy can mail prescriptions to patients in the state of Michigan. For questions about the pharmacy, call **(866) 946-7695**.

Note:

- You must contact the transplant team before you take any over-the-counter medicine and prescription not ordered by the Transplant Center.
- Pregnancy after transplant is considered high risk. It increases the risk of rejection to your transplanted organ and also causes complications with the pregnancy. You should discuss any plans for pregnancy with your transplant hepatologist.

Laboratory Blood Draws

An essential part of your transplant will be close monitoring of your transplanted liver for life. The best way to tell if your liver transplant is working well is by blood work (also known as labs). The results will tell your provider if further interventions are necessary such as more or less medications. You can have labs drawn close to your home and have the results faxed to the Transplant Center.

Clinic Visits

Clinic visits are another way to monitor how well you are doing after a liver transplant. Visits are frequent immediately following transplant, but become less frequent as you recover. A clinic visit could lead to readmission based on your symptoms.

Medical Procedures

Medical procedures will be performed on an as-needed basis. Generally, they are most frequent following the transplant surgery or during a rejection episode. The procedure ordered is based on the problem that needs intervention. They could include, but are not limited to ultrasound, magnetic resonance imaging (MRI), computed tomography (CT) and liver biopsy.

Reconnection to Local Gastroenterologist/Primary Care Physician

We require all patients have a primary care physician appointment three months after transplant. The primary care provider will help your transplant doctors manage your general medical needs such as vaccines, mammograms, high blood pressure and diabetes. Maintaining contact with your local gastroenterologist will help you obtain routine health screenings (such as a colonoscopy) as recommended. Most gastroenterologists and primary care physicians are not comfortable with transplant medications and possible complications. Therefore, you will most likely be a patient at the University of Michigan Health Transplant Center for life to help manage your care in coordination with your local providers.



Life After Transplant: A Lifetime Commitment

Without complications, most patients are able to go back to work anywhere from six weeks to six months after transplant. You had a liver transplant to improve your quality of life.

A successful liver transplant is a group effort between the patient, family and transplant team that requires a lifetime commitment.

Who Do I Contact if I Have Questions?

If you have any questions at any point during the liver transplant process, please contact your transplant coordinator or the Transplant Call Center at **(800) 333-9013**.

You Should Know

Please contact your transplant coordinator or the Transplant Call Center at (800) 333-9013 with any questions.

Want to Learn More or Share Resources With Your Family and Friends?

This education booklet can be found on the University of Michigan Health Transplant Center website at UofMHealth.org/conditions-treatments/transplant/liver-transplant-patient-care-guide. A more detailed education book can be found at that link as well.

For general information about the University of Michigan Health Transplant Center, please visit UofMHealth.org/transplant.

University of Michigan Health Patient Portal

What is MyUofMHealth.org?

MyUofMHealth.org offers patients personalized and secure online access to portions of their medical records. It enables you to securely use the internet to help manage and receive information about your health. With **MyUofMHealth.org**, you can use the internet to:

- Request medical appointments.
- View your health summary from the **MyUofMHealth.org** electronic health record.
- View test results.
- Request prescription renewals.
- Access trusted health information resources.
- Communicate electronically and securely with your medical care team.

How Do I Sign Up?

Patients who wish to participate will be issued a **MyUofMHealth.org** activation code. There are two ways to get an activation code. Patients can get an activation code after their clinic visit or they can request an activation code by completing the online request form located on the **MyUofMHealth.org** website. This code will enable you to login and create your own username and password.

Who Do I Contact if I Have Further Questions?

You may e-mail HIM-PatientPortal@med.umich.edu, or you can call the Health Information Management Department at (734) 615-0872, Monday-Friday, 8 a.m.-5 p.m.

The University of Michigan Health Transplant Center is pleased to offer two types of visits: Clinic (in-person) and virtual (over video). Both options are available with most providers at the Transplant Center for many pre- and post-transplant appointments. If you are interested in a virtual visit, you must have access to the University of Michigan Health patient portal. University of Michigan Health currently cannot offer virtual visits for patients outside of Michigan. For more information, or to schedule any type of visit, please contact the Transplant Center at **(800) 333-9013**.

The Transplant Center has an education app available for download on Apple and Android devices. For details on the app, please visit **UofMHealth.org/conditions-treatments/transplant/transplant-education-apps**.

Parking and Getting to Appointments

Our patients and visitors may park in the convenient patient and visitor parking structure (P2 and P3) attached to the Taubman Center outpatient building and University Hospital. Handicapped parking spaces are clearly marked and available on each level of the structure near the patient elevators. The parking structure is staffed 24 hours a day, seven days a week. Multiple-day parking passes are available for family members staying for an extended period of time. Patients can validate their parking ticket in any outpatient clinic or at the nurses station of any inpatient unit to qualify for a reduced daily parking fee of \$3.00 (if parked for more than eight hours.) Parking for less than eight hours costs \$3.00 and does not require validation.

Parking information can be found online at **UofMHealth.org/parking**.

Patients and primary caregivers whose income falls below federal poverty guidelines may qualify for a reduced parking fee. This program is administered by the Guest Assistance Program (University Hospital, Room 2B203, telephone: **[734] 764-6893** or **[800] 888-9825**).

Reception and information centers are located at all entrances to the hospitals and outpatient clinic areas. When you arrive, customer service personnel at these stations will gladly show you how to get to your doctor's office or appointment location. In addition, help telephones are located throughout the hospital. If you or your family members require special assistance (wheelchairs, child strollers, stretchers, escorts or valet parking), these are available at the main entrance and drop off areas at University Hospital, the Rogel Cancer Center, Frankel Cardiovascular Center, C.S. Mott Children's Hospital and Von Voigtlander Women's Hospital.

For more information, please call University of Michigan Health at **(734) 936-4000**.

Lodging

Michigan Medicine Lodging helps patients and families find overnight lodging during their time at Michigan Medicine. We know finding the right accommodations can be challenging so the Michigan Medicine Lodging team is here to help. Michigan Medicine Lodging can handle your lodging needs so you can focus on yourself while being treated at Michigan Medicine.

Reservation Services

Best Rates for Rooms that Meet Your Needs: Our team members will work with you to match your preferences with a local lodging option at the best rates possible. For example, if a complimentary breakfast, handicapped-accessibility or shuttle service is a priority for your family, we will work with you to find the best option to meet your needs.

Onsite Reservations for Med Inn: We make all of the reservations for our 30-room on-site Med Inn hotel.

Partnership with Area Hotels and Motels: Michigan Medicine Lodging also partners with more than 30 hotels and motels in the area (currently in Ann Arbor, Brighton and Livonia) to provide uniquely tailored services matched to your specific needs. Based on your information and preferences, we will make your reservations, provide you with information about hotel amenities, give directions to the hotel and answer any questions you may have. Michigan Medicine Lodging can help you make arrangements with many hotels and organizations, often at a better rate than what you might otherwise receive.

Contact Us

For assistance with lodging reservations, contact Michigan Medicine Lodging at **(800) 544-8684** or **(734) 936-0100**. You may also complete an reservation request form online at **UofMHealth.org/patient-visitor-guide/michigan-medicine-lodging**.

Transplant-related Websites

- **University of Michigan Health Transplant Center**
UofMHealth.org/transplant

The official website of the University of Michigan Health Transplant Center geared to provide patients with information regarding the Transplant Center and the transplant process for all solid organ programs.

- **Scientific Registry of Transplant Recipients (SRTR)**

srtr.org

The Scientific Registry of Transplant Recipients (SRTR) provides ongoing research to evaluate information and tracks all transplant patients from the time of transplant through discharge, then annually until graft failure or death.

- **United Network for Organ Sharing**

unos.org

United Network for Organ Sharing is a non-profit, scientific and educational organization that administers the Organ Procurement and Transplantation Network (OPTN), collects and maintains its data, and serves the transplant community.

- **Gift of Life Michigan (GOLM)**

GiftOfLifeMichigan.org

Founded in 1971, Gift of Life Michigan (GOLM) is the only non-profit full-service organ and tissue recovery agency in Michigan. As an organization, Gift of Life Michigan acts as an intermediary between the donor hospital and the recipient Transplant Center providing all the services necessary for organ, tissue and eye donation.

- **Transplant Living**

TransplantLiving.org

Transplant Living is a website supported by the United Network for Organ Sharing and is promoted as your prescription for transplant information.

- **Organ Procurement and Transplantation Network (OPTN)**

optn.transplant.hrsa.gov

The Organ Procurement and Transplantation Network (OPTN) is a unique public-private partnership that is committed to improving the effectiveness of the nation's organ procurement, donation and transplantation system.

- **Extra Help for Medicare**

socialsecurity.gov/extrahelp

A low-income subsidy set up through the federal government to help with Part D premiums and copays.

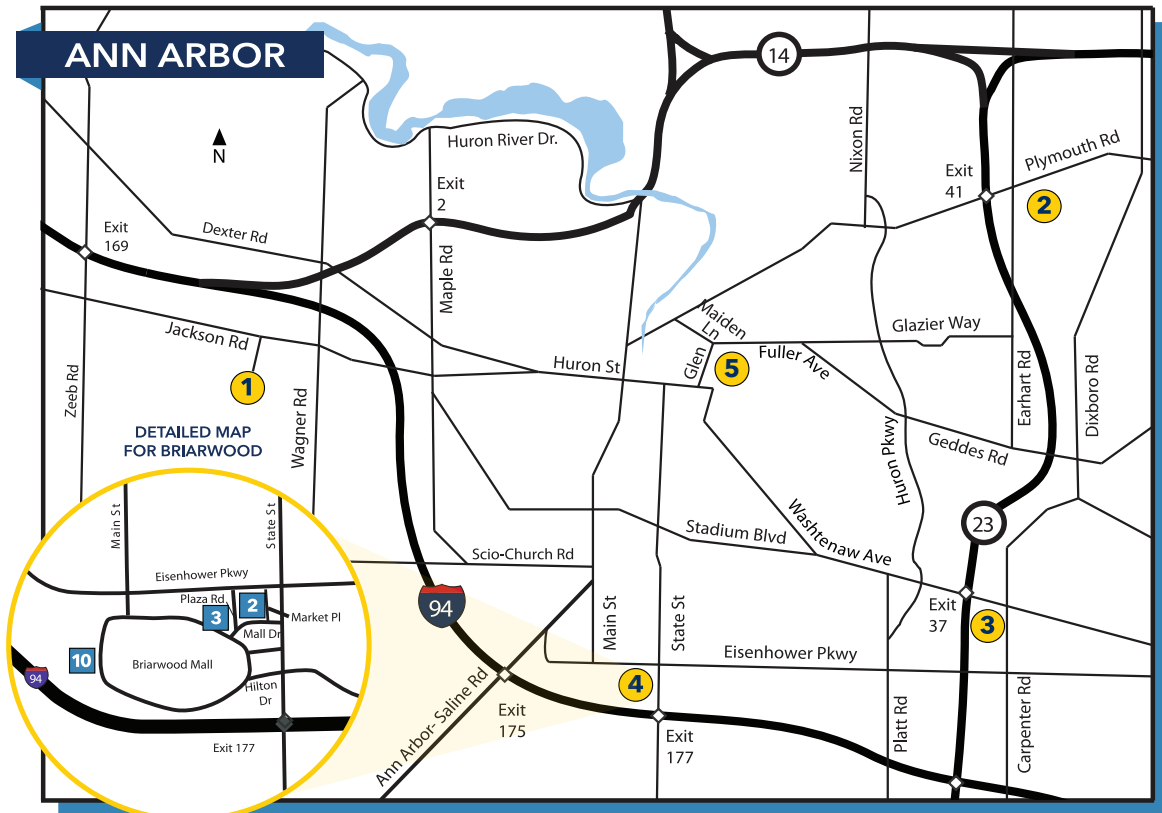
LABORATORY PATIENT SERVICE CENTERS



MLabs Patient Service Centers offer collection of specimens such as blood and urine for laboratory testing.

No appointment is necessary, but we recommend to call ahead to confirm current hours of operation and to schedule glucose tolerance testing.

Test results are available from your physician or the Michigan Medicine patient portal at <https://www.myuofmhealth.org>



1 WEST ANN ARBOR HEALTH CENTER
 380 Parkland Plaza, Suite 130
 Ann Arbor, MI 48103
Ph: 734.232.9720 **Fax:** 734.232.9772
 Mon-Th 7am - 7pm
 Fri 7am - 5pm
 Sat 8am - Noon

2 EAST ANN ARBOR HEALTH CENTER
 4260 Plymouth Rd., Ann Arbor, MI 48109
Ph: 734.647.5685 **Fax:** 734.647.6457
 Mon-Th 7am - 7:30pm
 Fri 7am - 5:30pm
 Sat 8am - 12:30pm

3 CARPENTER ROAD (Ann Arbor/Ypsi)
 Packard Health Center
 2650 Carpenter Rd., Ann Arbor, MI 48108
Ph: 734.998.0725 **Fax:** 734.998.0726
 Mon-Fri 8am - 5:00pm

4 BRIARWOOD HEALTH CENTERS
Building 2
 400 E. Eisenhower, Suite B.
 Ann Arbor, MI 48108
Ph: 734.998.4413 **Fax:** 734.647.3718
 Mon- Fri 8am - 3:30pm

Building 3
 375 Briarwood Circle
 Ann Arbor, MI 48108
Ph: 734.998.0284 **Fax:** 734.998.6502
 Mon-Fri 7am - 2:30pm
 (Closed 1st Tuesday of each month 8am - 10:30am)

Building 10
 1801 Briarwood Circle
 Ann Arbor, MI 48108
Ph: 734.913.0167 **Fax:** 734.998.4489
 Mon-Fri 9:30am - 5:00pm
 Sat 8:00am - Noon
 (Closed 2nd Wednesday of each month 8am - 1pm)

5 MAIN MEDICAL CAMPUS
 1500 E. Medical Drive, Ann Arbor, MI
Cardiovascular Center, Fl. 3, Recep. A
Ph: 734.232.5111 **Fax:** 734.232.5130
 Mon-Fri 7am - 3pm

Children's & Women's Hospital, Fl. 2, Recep. B

Ph: 734-232-5672 **Fax:** 734.232.5682
 Mon-Fri 7am - 6pm

Cancer Center, Fl. B2, Recep. E

Ph: 734.647.8913 **Fax:** 734.647.8937
 Mon-Fri 7am - 6pm

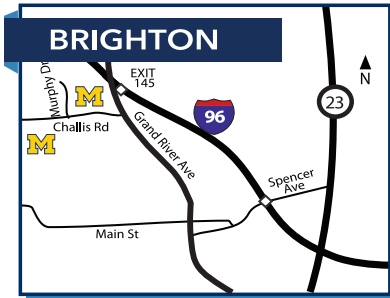
Taubman Center, Fl.1, Recep. D

Ph: 734.647.6304 **Fax:** 734.647.6779
 Mon-Fri 7am - 6pm

Taubman Center, Fl. 3

Ph: 734.936.6760 **Fax:** 734.936.7419
 Mon-Fri 7am - 6pm

LABORATORY PATIENT SERVICE CENTERS



BRIGHTON HEALTH CENTER
8001 Challis Road
Brighton, MI 48116

P: 810.494.2649
F: 810.494.2645

Mon - Fri 7am - 3pm
Sat: Visit Bright Center
For Speciality Care

BRIGHTON CENTER FOR SPECIALTY CARE
7500 Challis Road
Brighton, MI 48116

P: 810.263.4087
F: 810.263.4090

Mon - Fri 7am - 6pm
Sat 7am - 4pm



CANTON • LIVONIA • NORTHVILLE

LIVONIA HEALTH CENTER
20321 Farmington Rd
Livonia, MI 48152

P: 248.473.4350
F: 248.888.1390

Mon - Fri 8am - 3:30pm

NORTHVILLE HEALTH CENTER
39901 Traditions Dr
Northville, MI 48168
(at 7 Mile & Haggerty)

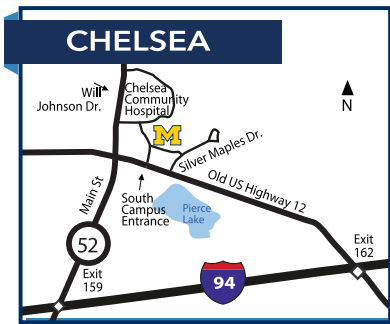
P: 248-305-4640
F: 248-305-4642

Mon - Th 7am - 6:30pm
Fri 7am - 5pm
Sat 8am - Noon
(Starting 3/5/22) 8:30am-12:30pm

CANTON HEALTH CENTER
1051 North Canton Center Rd
Canton, MI 48187

P: 734.844.5280
F: 734.844.5288

Mon - Th 7am - 7:30pm
Fri 7am - 5pm
Sat 8am - Noon

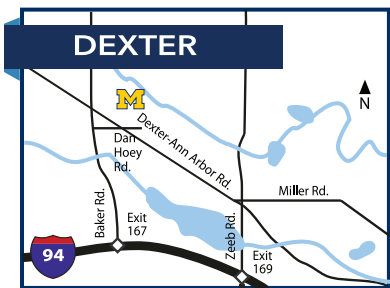


CHELSEA

CHELSEA HEALTH CENTER
14700 E. Old U.S. 12
Chelsea, MI 48118

P: 734.475.4483
F: 734.433.4246

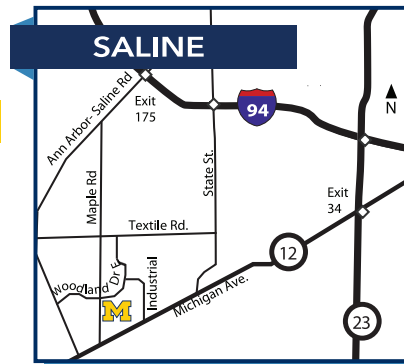
Mon - Fri 8am - 3:30pm
Sat 8am - Noon



DEXTER

DEXTER HEALTH CENTER
7300 Dexter-Ann Arbor Rd
Dexter, MI 48130

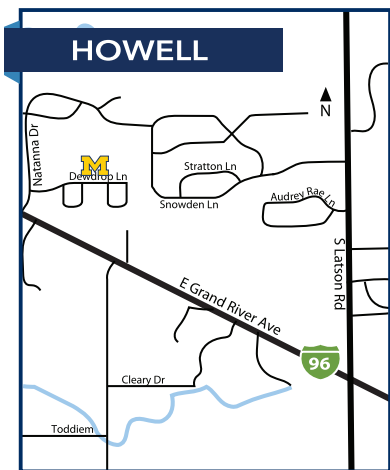
TEMPORARILY CLOSED



SALINE

SALINE HEALTH CENTER
700 Woodland Dr E
Saline, MI 48176

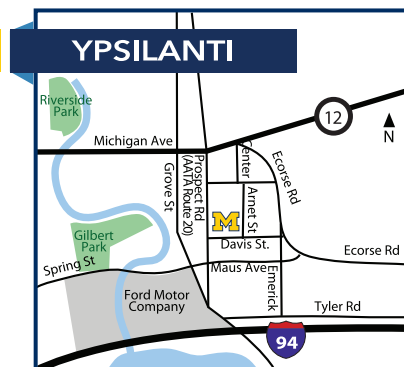
TEMPORARILY CLOSED



HOWELL

HOWELL HEALTH CENTER
3399 E Grand River Ave
Howell, MI 48843

TEMPORARILY CLOSED



YPSILANTI

YPSILANTI HEALTH CENTER
200 Arnet St.
Ypsilanti, MI 48198
(entry drive off Davis St)

P: 734.544.3277
F: 734.544.3272

Mon - Fri 9am - 5pm

Closed daily for lunch
between 12:30-1:00pm

Michigan Transplant Center Policy #321

Tobacco Cessation Policy



I. POLICY STATEMENT

The University of Michigan Adult Liver Transplant Program requires tobacco use cessation of all patients listed for liver transplantation.

II. PURPOSE

The purpose of this policy is to describe our requirement for tobacco use cessation, to describe resources available to support tobacco cessation among candidates for liver transplantation, and to provide guidelines for enforcement of the policy and the response to noncompliance with the tobacco cessation policy.

In addition, the policy document provides justification for the policy from the best available medical evidence about tobacco use among transplant patients.

III. DEFINITIONS

- Tobacco use:** Active use of any amount or frequency of any tobacco product (including inhaled and smokeless products)
- Cotinine:** Metabolite of nicotine that may be measured in the serum or urine and used to confirm exposure to tobacco products. Subjects who are using tobacco or a high dose nicotine patch will have detectable cotinine in the urine and serum.
- Anabasine:** Tobacco products contain two alkaloids, normicotine and anabasine. The presence of anabasine in the urine at > 10 ng/ml indicates active tobacco use and is used to confirm active tobacco product use (Anabasine positive) versus high dose nicotine patch (Anabasine negative). This test is a send out to Mayo labs
- Tobacco Consultation Service (TCS):** Comprehensive UM program providing support for tobacco cessation

IV. STANDARDS

A. Tobacco Cessation Education

1. All patients evaluated for liver transplantation at the University of Michigan will be informed of the program requirement that all individuals listed for liver transplantation within our program must not engage in the use of any tobacco product (inhaled, smokeless, e-cigarettes or nicotine supplementation) prior to or after liver transplantation.
2. Active use of any tobacco product of any amount or frequency is considered a relative contraindication to active listing for liver transplantation. However, in cases where patients are urgently evaluated for liver transplantation (fulminant hepatic failure or acute decompensation of chronic liver disease) and have not had time to demonstrate compliance with tobacco use cessation, the treating physicians may proceed with evaluation and listing as clinically indicated. Tobacco cessation education and enforcement in these unique cases will be deferred to the post-transplant period.
3. Patients using tobacco products at the time of evaluation for liver transplantation will be referred to the University of Michigan MHealthy Tobacco Consultation Service (phone 734-998-6222, fax 734-998-2191, email – quitsmoking@med.umich.edu, <http://hr.umich.edu/mhealthy/programs/tobacco/consultation/>) or their local smoking cessation program.
4. Tobacco product users with psychiatric co-morbidity/ substance abuse or those who have failed prior cessation efforts should be considered for treatment through the UMHS Adult Addiction Treatment Services at East Ann Arbor. Referrals can be made by calling the intake coordinator at 2-0465 or via MiChart referral.
5. Consult to Transplant Psychiatry/Dr. Winder for additional support in current medical therapies prescribed for assistance in quitting the use of tobacco.

B. Tobacco Cessation Enforcement

1. All patients with a history of tobacco use are expected to report to the transplant center (via their pre-transplant nurse, liver transplant coordinator or transplant social worker) when they have quit tobacco use.
2. Tobacco use cessation will be confirmed by measurement of a serum cotinine level on a case-by-case basis. A negative cotinine test may be required for placement on the waiting list, and testing will be performed if there is any suspicion of continued use.
3. Documentation of a positive serum cotinine test is consistent with either tobacco or nicotine use. A urine anabasine level can be obtained to confirm active tobacco use. Subjects with a positive serum or urine cotinine level requires two consecutive negative tests over a minimum of 2 weeks or longer to be considered for active listing for liver transplantation. The serum cotinine test can be done at any laboratory while the urine anabasine test is a send out to MAYO labs from UMHS.

4. Evidence of relapsed tobacco use – documented by patient or family admission, and confirmed by serum cotinine test – will potentially prevent listing of a candidate in the evaluation process, and is grounds for placing a listed patient in inactive status, until tobacco use cessation is documented with at least one negative serum cotinine test.

V. EXHIBIT

A. General population

In the general population, smoking is a well-recognized risk factor for heart disease, stroke, peripheral vascular disease, kidney disease, peptic ulcer disease, lung disease, and cancer. Smoking increases the risk of all-cause mortality and contributes to approximately 5 million premature deaths per year. In 2000, smoking accounted for 4.83 million deaths worldwide. Based on prevalence of 30%, the World Health Organization has estimated that smoking will kill 8 million people a year by 2030.

B. Liver transplant recipients

1. Mortality and Morbidity

Among liver transplant recipients, smoking is associated with an increased overall mortality, cardiovascular-related mortality, and sepsis-related mortality in a retrospective study of 136 patients from Scotland. Self-reported smokers had a similar 1-year survival to patients who denied smoking, but those who reported smoking had a higher mean length of hospital stay and significantly higher hospital charges. Smokers were also found to have a higher incidence of ascites and encephalopathy at referral to the transplantation program. There was, however, no elevation in Model for End-Stage Liver Disease score or Child-Turcotte-Pugh score.

2. Biliary Complications

Data from our institution showed that active smokers had a 92% higher rate of biliary complication rates compared with lifetime nonsmokers (HR, 1.92; 95% CI, 1.07–3.43). Smoking clearly portends a significant risk of biliary complications following liver transplantation (LT).

3. Vascular Complications

Smoking is associated with a higher risk for developing vascular complications, especially arterial complications after liver transplantation. In patients with a history of cigarette smoking, incidence of vascular complications was higher than in those without history of cigarette smoking (17.8% v 8%, P=0.02). Having quit cigarette smoking 2 years before liver transplantation reduced the incidence of vascular complications by 58.6% (24.4% v 11.8%, P=0.04). The incidence of arterial complications was also higher in patients with a history of cigarette smoking compared with those without such history (13.5% v 4.8%, P=0.015). Cigarette smoking cessation for 2 years also reduced the risk of arterial complications by 77.6% (21.8% v 5.9%, P=0.005). However, the incidence of venous complications was not associated with cigarette smoking. Furthermore, there was no significant association between development of vascular complications and all other characteristics studied.

4. Post-transplant malignancy

At 10 years, the cumulative rate of malignancies was 12.7% in active smokers compared with 2.1% in nonsmokers (P=0.019). Tobacco use is also associated with a higher incidence of posttransplantation de novo noncutaneous neoplasms as well as solid organ (10.5% at 10 years) and hematologic malignancy (3.2% at 10 years), especially in those transplanted for primary sclerosing cholangitis and alcoholic liver disease.

C. Conclusion

Smoking has a negative impact upon health regardless of transplant status. Smoking status should be clearly defined when evaluating transplant candidacy and in counseling patients with cirrhosis. Efforts should be made to counsel all liver transplant recipients against smoking. Tobacco cessation aids, support and counseling should be provided to active smokers so that they can successfully quit smoking and stay free of nicotinic products prior to liver transplantation. This measure may decrease morbidity, length of hospitalization stay and vascular and biliary complications as well as improve overall post-transplant survival.

VI. REFERENCES

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Michigan Transplant Center Policy #323

Liver Transplant Program Alcohol and Substance Use Disorder Policy



I. POLICY STATEMENT

The University of Michigan Adult Liver Transplant Program will have consistent standards regarding the criteria process and evaluation of all candidates with a history of substance use disorder (SUD) for possible liver transplantation.

II. PURPOSE

The purpose of this policy is to provide a written protocol and process for the evaluation of individuals with a history of SUD in need of liver transplantation. A comprehensive and systematic approach to an individual patient's prior history of substance use will be undertaken. The steps involved with the evaluation, from completion of the substance use contract to signing release of information forms and correspondence with local mental health providers, will be standardized. The social work screening intake form and SIPAT will be completed for each patient. Alongside clinical judgment, the SIPAT gives structure to the psychosocial evaluation process and assists in risk stratification for negative outcomes post-transplant using 4 domains: patient readiness (5 items), social support system (3 items), psychological stability and psychopathology (10 items), and effect of substance use (5 items) with a total possible score of 120. Scores of 0-20 indicate a favorable candidate, 21-39 suggest a minimally acceptable risk profile, and scores 40-69 signal a poor candidate. A score ≥ 70 demonstrates particularly high risk. In addition to the score, several individual factors may directly impact the evaluation. Certain high-risk patients with psychiatric comorbidity may require evaluation by Transplant Psychiatry or Psychology.

III. DEFINITIONS

LTEM:	Liver Transplant evaluation meeting
MAPS:	Michigan Automated Prescription System
M-DOCC:	Michigan Depression Outreach & Collaborative Care
SIPAT:	Stanford Integrated Psychosocial Assessment of Transplant.
OTIS:	Organ Transplant Information System
DEA:	Drug Enforcement Agency
SUD:	Substance Use Disorders

IV. STANDARDS

A. Standards

1. All individuals undergoing evaluation in the program are interviewed by the Transplant Hepatologist and Surgeon to determine if they may be a candidate. All subjects proceeding with evaluation will also undergo an interview by one of the transplant social workers.
2. The Transplant Social Worker will complete their routine pre-transplant assessment which will include a templated note and a SIPAT score (1). The clinician completes the SIPAT in MiChart in its own tab (entitled "SIPAT for Transplant") in the "Flowsheets" section of the patient's chart. An abbreviated SIPAT is also visible in Social Work and Psychiatry/Psychology notes.
3. A signed release of information form for mental health records will be obtained by the Transplant Social Worker to facilitate ease of exchange of information.
4. At the clinic visit, Social Work completes the Substance Use in Liver Transplant form (see Exhibit A). This form explicitly discusses the prohibition of tobacco, drugs, alcohol, and other illicit substances. The Social Worker explains the details of the policy and obtains the signatures of the patient and a caregiver as evidence of awareness and consent.
5. [MAPS](#) is a system for entering, managing, and reporting Schedule II-V prescription data submitted by dispensers and prescribers to the State of Michigan as required by Michigan Public Act #231 of 2001. Using patient name and birthday, a MAPS report will be generated by mid-level providers as part of the pre-transplant evaluation. Any prescriber with a license and DEA number can register and request these reports. The report contains data about recent prescriptions written for and filled by the patient. A generated report remains viewable for 30 days by authorized personnel. Additional MAPS reports will be queried as needed.
6. At LTEM, Social Work presents a patient's psychosocial history (including substance use) the SIPAT score, and their clinical impressions and recommendations. Integrating this information, the committee may recommend that pre-transplant toxicological monitoring and formal treatment of SUD be incorporated in the patient's pre-transplant care.

7. In collaboration with Social Work, select patients with SUD and/or psychiatric disorders may require formal evaluation by Transplant Psychiatry or Psychology. These referrals should contain specific issues to be addressed and are initiated at LTEM or as a "Transplant Psychiatry or Transplant Psychologist" order in MiChart.
8. At minimum, all liver transplant candidates with a history of SUD, should undergo urine toxicology screens including urine ethyl glucuronide and Serum PEth approximately every 6 months and as needed. This process will be coordinated with clinic visits and routine outpatient lab draws for the medical hepatologists using a standing order in MiChart. In addition, toxicology will be obtained in hospitalized patients with unexplained mental status or behavioral changes.
9. Any individuals who are found to be in violation of the SUD policy will have their candidacy re-reviewed at the next LTEM and be immediately placed on hold. Transplant Social Work and/or Psychiatry or Psychology will contact patients with a possible violation of the policy to further explore the clinical circumstances. Additional monitoring, treatment or delisting will then be determined on a case-by-case basis at LTEM.

B. Pre-transplant Mental Health and Substance Use Disorder Treatment

1. The type and level of pre-transplant mental health evaluation and/or substance abuse evaluation will be individualized. The committee will determine the need for and type (inpatient vs. outpatient, local vs. outside) referral that will be made. Care coordination with mental health and/or SUD providers will be conducted by Transplant Social Work, Psychology, or Psychiatry when indicated.
2. A templated form will be sent to the local SUD counselor/ mental health provider for return to the transplant center. The form will summarize the provider's diagnostic impression, prognosis for sobriety and success with transplant, and patient response to treatment.
3. Using administrative assistants and MICHART, Social Work will track when patient letters were sent and the status of receiving the provider evaluation forms. The alarm clock function in OTIS will be used as reminders for Transplant Social work to contact individual patients/providers for updates.
4. Individual patients will be re-discussed LTEM as needed to determine their continued eligibility and appropriateness for transplantation after Transplant Social work has received interval assessments on their progress.

V. EXHIBIT

- A. Exhibit: [Contract](#)

VI. REFERENCES

Maldonado JR, Dubois HC, et al. The Stanford Integrated Psychosocial Assessment for Transplantation (SIPAT): a New tool for the psychosocial evaluation of pre-transplant candidates. *Psychosomatics* 2012; 53: 123-132.

Michigan Transplant Center Policy #323

Policy on Substance Use and Liver Transplantation



The University of Michigan Liver Transplant Program requires that all liver transplant candidates agree to abstain completely from tobacco, electronic cigarettes, alcohol, marijuana (including “medical” marijuana), and any illicit substances. Illicit substances include cocaine, heroin, hallucinogens, and controlled substances not prescribed by a physician or that are being used for non-medical purposes. Any use of any of these substances in any form is NOT ALLOWED under this policy. The information regarding a patient’s previous and current tobacco, drug, and alcohol use provided during the evaluation for a liver transplant at the University of Michigan must be correct. If in the future the Transplant Team finds that a patient has not been completely truthful, that patient may be removed from the transplant list.

Patients currently using tobacco products at the time of their transplant evaluation must discontinue use in order to be placed on the waiting list for transplant. We will assist you in identifying resources to help you discontinue use if necessary and the Transplant Team must be made aware of any nicotine-replacement therapy (patches, gum, lozenges) being used. If there is concern about ongoing tobacco use, urine testing for tobacco products will be performed. A positive test or refusal to have the test performed may prevent you from being placed on the transplant waiting list.

In addition, if in the future any patient, either waiting for a liver transplant on the University of Michigan list or currently being evaluated as a potential recipient of a liver transplant, is found to have consumed alcohol, marijuana, or used an illicit drug, that patient will be removed from the transplant list. A positive test for alcohol, marijuana, or illicit substances in the blood or urine of a patient is considered to be absolute evidence that the patient has violated this substance use policy. Patients must therefore be certain they do not ingest any alcohol of any kind, including cough medicines, over the counter medications, or “alcohol free” beers that contain small amounts of alcohol. A conviction for driving while intoxicated or impaired will similarly be considered to be a violation of this policy.

When requested, patients accepted for liver transplantation must agree to undergo random urine or blood screens for alcohol, marijuana, and illegal substances. Refusal to undergo such a test in the timeframe requested will be treated the same as a positive test and the patient will be removed from the transplant list.

I have read the above policy, questions about the policy have been answered to my satisfaction, and I understand the meaning of the policy. I agree to follow it. I have received a copy of this policy.

Patient signature _____ Date _____

Witness _____ Date _____

I have explained the above policy to _____ and answered any questions they or their family have asked.

Social Worker signature _____ Date _____

