



MORE THAN A TEST.



BEECHTREE
LABORATORIES

MORE THAN A TEST.

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LETTER FROM THE PRESIDENT

**Beechtree Diagnostics was founded on a simple premise -
"It's more than a test".**

In 2015, Beechtree Diagnostics was established to fill the gap left by other laboratories in providing quality testing, reporting, and service to physicians and professionals dealing with the difficulties of Mental Health, Substance Use Disorder, Pain Management Treatment, as well as Court Ordered Substance Use Testing. Beechtree created unique processes to directly benefit medical professionals and their patients. Beechtree Diagnostics is a CLIA certified, and CAP accredited high complexity laboratory located in Draper, Utah.

Our molecular labs were also born from community need. Alaska's unique geography needed local services to support local communities, especially in the midst of a global pandemic. Remote communities along with the transitional nature of the work force supporting critical Alaskan economic needs, like the oil and fishing industries, demanded local solutions. Beechtree committed to that goal to support and hire Alaskan residents and invest in local com-

munities with More than a Test. We then took that same model and applied it to the rest of the country supporting rural and underserved locations across the United States.

Beechtree constantly improves and challenges the status quo. We know that there is an individual on the other side of that test and many individuals working to provide professional medical care to ensure optimum outcomes. Beechtree is always innovating to offer the very best science in all our testing. We recognize that timely information is also important to clinical outcomes so we have invested to ensure high capacity throughput to ensure results are prompt. Outstanding service is the glue that brings our testing together, we provide the best end to end technology, market leading reporting, clinical education and hands on service. All this to deliver better patient outcomes - that's our mission!

Mike Murano
President



WHY **BEECHTREE** LABORATORIES?

Beechtree Diagnostics was founded on a simple premise -

"It's more than a test".

We know that there is an individual on the other side of that test and many individuals working to provide professional medical care to ensure optimal outcomes. This translates into an organization that constantly improves and challenges the status quo.



Beechtree diagnostics tests are run using state of the art Liquid Chromatography Mass Spectrometry (LC-MS) test equipment. LC-MS testing is the 'gold standard' in the world of urine toxicology allowing more accurate and precise measurement of analytes and metabolites providing test results that can be relied on from doctor offices to courtrooms.

Beechtree made significant capital investment to use vacuum sealed tubes for urine specimen collection. No mess for your staff, and no spillage during transport to the lab. Since several urine tests are usually shipped together, this eliminates possible cross-contamination during transport.

Other companies may spend 6-8 hours manually transferring the urine into the test trays, potentially resulting in false positives. Beechtree Diagnostics has implemented the use of robotics to transfer the sample to testing trays and barcode technology to label each tube speeding the process of preparing each sample for testing while reducing or eliminating the possibility of false positives due to human error.

In 2020 the world found itself amid a global pandemic. Beechtree scientists pivoted into the world of molecular testing to fill the void that left patients waiting days and sometimes weeks to get their Covid-19 test results. As a result, Beechtree Molecular Lab was opened in Anchorage Alaska in the summer of 2020. Once more Beechtree raised the bar and reduced turnaround time for test results to less than 24 hours and created a new standard of care demanded by patients and healthcare providers alike.

Beechtree Laboratories now provide both Diagnostic and Molecular Testing for their clients throughout the United States.

Our unique boutique lab concept allows a more localized connection between the clinic and the laboratory providing benefits for healthcare professionals, including:

- Ability to contact the scientists in the lab for technical assistance, so the practitioner can obtain help with interpreting test results or determining which panel(s) to order.
- Our local support team ensures samples are accurately processed for delivery to the lab.
- Time from collection to the lab can be dramatically reduced—usually within 24 hours, leading to faster result turn-around times.
- Customized testing requirements can be facilitated based on localized needs and requirements.
- Clinical training related to your own test results compared against your peers.
- Education on how to better utilize results to match treatment protocols.



URINE TOXICOLOGY

Beechtree stands behind Four Pillars of Technology to provide the very best objective test results available by any lab anywhere.

1

ROBOTIC &
VACUUM TUBE
COLLECTION

2

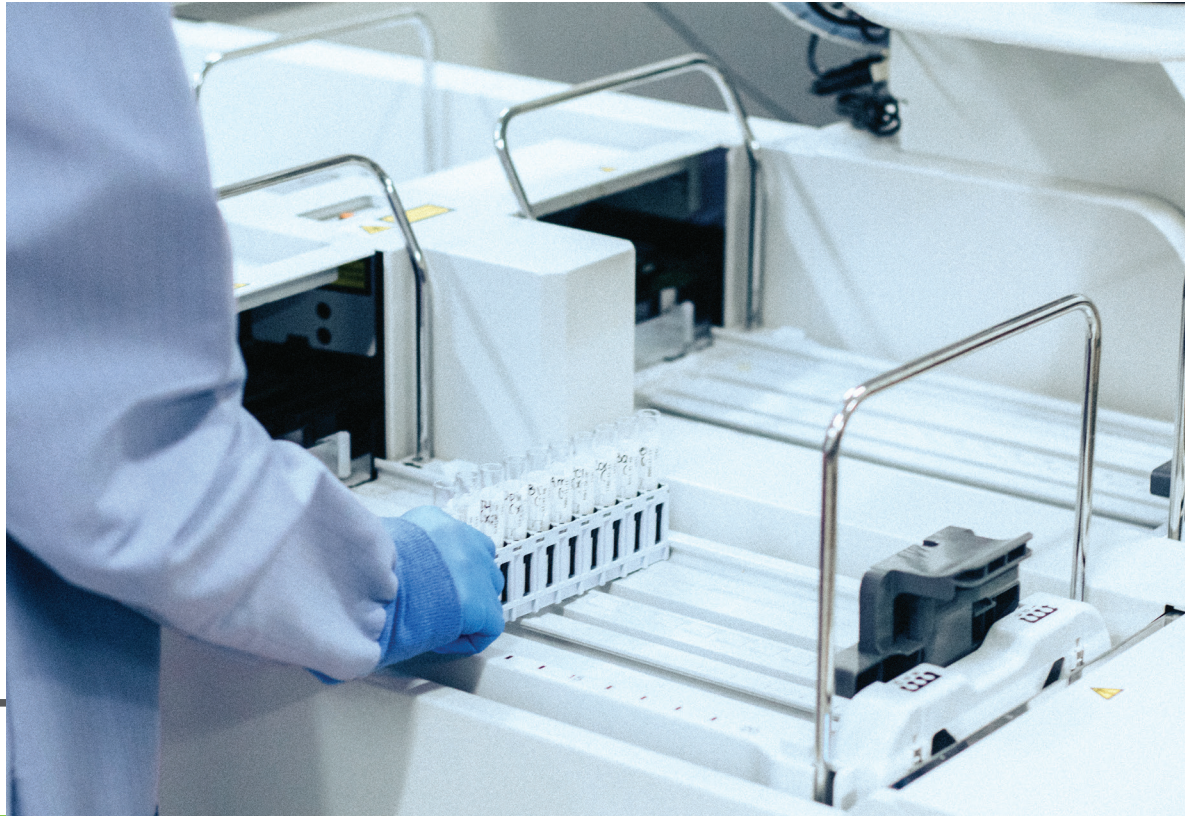
SUBVERSION
DETECTION

3

COMPREHENSIVE
PANEL

4

EASY TO READ
REPORTS



VACUUM TUBE COLLECTION

By transferring urine samples to vacuum tubes Beechtree is able to provide a safer way to transport samples to the lab.

Urine collection cups were designed to collect urine not to ship urine. Put a few full cups in a shipping bag and send it back to yourself. **WARNING:** Better put them in a leak proof inner bag because you will be receiving a bag full of urine when it arrives in your mailbox.

Vacuum tubes were selected because they don't break or leak even when subject to rough treatment during shipping. Using vacuum tubes eliminates possible cross contamination from leakage during shipping.

Vacuum tubes can be processed directly on our state-of-the-art robotic systems that read barcode labels and can transfer samples into testing trays in a fraction of the time, while avoiding possible human error.

(Human error rate in the laboratory industry is around 3%—much too high when someone's life may be significantly affected by a human error.)

The entire process is designed to maintain the integrity of the sample and provide the fastest turn-around times in the industry.

In a 2019 study done by the Drug Enforcement Agency, it was determined that the national average of tests being beaten by using synthetic urine or subversion products was over 10%. Traditional validity detection methods of Creatinine, Oxidant, pH, and Specific Gravity are no longer enough to ensure accurate results.

The synthetic urine industry has grown to over \$1 billion in annual sales. These products are manufactured to beat sophisticated drug tests and can even be purchased with prescription medications added to them to mimic test results for patients using prescribed medicines that they may be diverting to others. These products are readily available online and at most local 'smoke shops'.

According to the DEA, "Apparently the cheaters are experiencing success. Research presented last September at the American Pain Management Conference reported that traditional validity measures failed to detect substitute or synthetic urine in 98 percent of urine samples where they were present. The

United States Drug Enforcement Agency (DEA) has estimated that at least 10 percent of all urine samples could be adulterated."

Oxidants and Detox Drinks are an even bigger industry. Designed to help individuals cheat and beat drug tests and sold as 'health drinks'. These drinks are designed to beat an 'observed test' by creating a 'clear zone' where a patient can actually urinate for a period of about 2-hours and traditional testing will not detect any drugs in their system. An internet search for ways to beat a urine drug test will bring up over 100 million websites devoted to beating drug tests.

These products are currently beating existing testing capabilities. All of Beechtree's UA tests include our security patented, market leading, validity technology specifically designed to detect subversion, including widely available synthetic urine and detox drinks. Our reporting algorithm details a RED/YELLOW/GREEN easy to interpret validity result and explanation.

SUBVERSION DETECTION



COMPREHENSIVE PANEL

Most labs test for common illicit drugs and drugs of abuse. After talking with our clients Beechtree added over 30 mental health medications that are not 'drugs of abuse' but are necessary as part of many medical treatment plans. Soon after adding these medications to our Comprehensive Panel, a Beechtree study found that as many as 69% of patients being treated for mental health disorders were not taking their prescribed medications. With that knowledge, physicians were able to adjust their treatment plans and to provide a better level of care.

NOTE: It should be pointed out that none of these drugs appear in any billing chart and are not reimbursed by any insurance provider. This is just one more example of the level of commitment Beechtree provides as part of its mission statement that "It's More Than A Test."

Beechtree turns toxicology testing into Medication Management. It's not just about passing or failing a drug test, it's what happens after. How does the results of the last test affect the future treatment for the patient? How do we not let a fall become a fail? Physicians can now make decisions to help patient back up and moving forward, even if it means 'falling forward.'



EASY TO READ REPORTS

Beechtree has turned toxicology reports from pages and pages of difficult to read and understand data to Medication Management At a Glance designed to be used quickly and effectively. At the top of every report is Patient Demographic information as well as date of testing just as you'd expect. What follows is what makes these reports a different and more effective tool.

Is the sample valid?

Using Beechtree's unique and patented validity panel you can see quickly whether the patient sample is in or out of range, but also whether or not the patient might have used synthetic urine or subversion products. Using a simple Green, Yellow, Red dot makes it easy. Green is everything is good. Red is this is someone trying to cheat the system. Yellow considers that things can be suspected without being cheating. Yellow allows the provider a chance to look at what other factors are happening in the patient's life that might be affecting their test results.

Is this what you expected?

Is this what you expected? It's time to verify that the patient is actually taking the medications prescribed and not taking someone else's medications or illicit drugs. Using a simple Green/Red system where green verifies that the patient has been compliant with their treatment plan and red where something is wrong. It's a good time to update the patient medication list provided to the lab to make sure that those medications are properly reported.

Does the Historical Data match the intended Rx?

Is your patient following the treatment plan 'long term'? It's easy to see how your patient is responding to their treatment plan and easy to make treatment plan changes. Each report contains the numerical results of the last five tests, with their corresponding levels. We've also included a longer-term outlook showing previous tests and their relative results graphically so you can see trends over an even longer time. This group of patients tend to fall from time to time, the report allows a chance to see how they've been trending so that a more informed decision can be made regarding their treatment plan.

EXAMPLE REPORT ONLY


BEECHTREE
 DIAGNOSTICS

 12351 South Gateway Park Place Suite D-700
 Draper, UT 84020
 PH: 801-893-2773

 Patient Name:
 Patient ID #:
 Date of Birth:
 Physician:

 Account:
 Requisition #:
 Sample #:
 Sample Type:

 Date Collected:
 Received:
 Certified:
 Certified By:

I verify that the results of this test have been evaluated against the current treatment plan and explained to the patient. Please sign, and date below. (Also initial each line item as you review test results below.)

Patient: _____ Provider/MA: _____ Date: _____

Validity Tests:

Test	Result	Ref. Range	Interpretation
pH	5.7	3-10.5	Consistent
Urine Creatinine	68	20-250	Consistent
Specific Gravity Index	1.029	1.003-1.05	Consistent
True Urine LD	117	>=10	Consistent
Oxidant History	59	>=10	Consistent

● Urine sample determined to be consistent with normal human urine.

Normal range values listed for pH, Specific gravity index, Urine creatinine, Oxidant History and True Urine LD are not for clinical treatment or diagnosis. Normal range values listed here are used for the sole purpose of evaluating specimen integrity of urine devoid of adulteration.

Prescribed Medications:

Fluoxetine

☐ **Result Summary:** Reviewed with patient _____ (Patient) _____ (Doctor/MA)

Reported Medications	Result	Cutoff	Unit	Interpretation	Expected	Inconsistent	Detection Window ¹
Antidepressants, Serotonergic class Administered:							
Fluoxetine	273	50	ng/mL	POSITIVE	YES	NO	4d
Norfluoxetine	489	50	ng/mL	POSITIVE	YES	NO	25d
Non-Reported Medications	Result	Cutoff	Unit	Interpretation	Expected	Inconsistent	Detection Window ¹
Cotinine	91	50	ng/mL	POSITIVE	NO	YES	4d
Dextromethorphan	138	50	ng/mL	POSITIVE	NO	YES	2-5d
Dextrophan	>1000	50	ng/mL	POSITIVE	NO	YES	2d

☐ **Historical Report:** Reviewed with patient _____ (Patient) _____ (Doctor/MA)

Test	Results	Reference Range	Interpretation
pH	4.9	3-10.5	Consistent
Specific Gravity Index	1.01	1.003-1.050	Consistent
Urine Creatinine	63.9	20-250	Consistent
Oxidant History	4.0	> 10	Inconsistent
True Urine LD	5.5	>10	Inconsistent

● Urine sample determined to be inconsistent with normal human urine. True Urine LD less than 10 and Oxidant History less than 10 suggests adulterated or synthetic urine.

Test	Results	Reference Range	Interpretation
pH	6.9	3-10.5	Consistent
Specific Gravity Index	1.084	1.003-1.050	Inconsistent
Urine Creatinine	78.9	20-250	Consistent
Oxidant History	>10	> 10	Consistent
True Urine LD	173.0	>10	Consistent

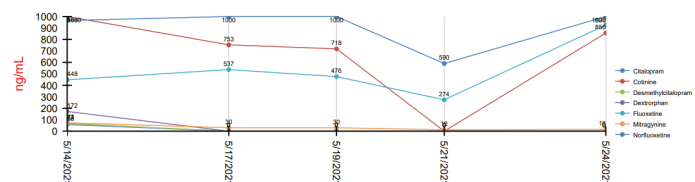
● Urine sample determined to be potentially inconsistent with normal human urine. Specific Gravity Index of 1.084 may indicate urine 'salting'.

Test	Results	Reference Range	Interpretation
pH	4.9	3-10.5	Consistent
Specific Gravity Index	1.012	1.003-1.050	Consistent
Urine Creatinine	78.9	20-250	Consistent
Oxidant History	>10	> 10	Consistent
True Urine LD	342.2	>10	Consistent

● Urine sample determined to be consistent with normal human urine.

Date:	05/24/2021	05/21/2021	05/19/2021	05/17/2021	05/14/2021	Unit:
Sample #:	210524BD0218	210521BD0370	210519BD0314	210517BD0172	210514BD0349	
Validity Code:	Green	Green	Green	Green	Green	
Cotinine	POS 856	ND	POS 718	POS 753	POS >1000	ng/mL
Mirtazapine	POS 16	POS 12	POS 30	POS 30	POS 73	ng/mL
Fluoxetine	POS 926	POS 274	POS 476	POS 537	POS 448	ng/mL
Norfluoxetine	POS >1000	POS 590	POS >1000	POS >1000	POS 965	ng/mL
Citalopram	ND	ND	ND	ND	POS 58	ng/mL
Desmethylcitalopram	ND	ND	ND	ND	POS 67	ng/mL
Dextrophan	ND	ND	ND	ND	POS 172	ng/mL

ND - Not Detected

☐ **Historical Summary:** Reviewed with patient _____ (Patient) _____ (Doctor/MA)


OCCUPATIONAL MEDICATION & COURT-ORDERED TESTING

Recently Beechtree introduced our exclusive High-Definition Screen allowing providers to see an enlarged panel of up to 50 analytes including many mental health medications.

Responding to the extreme gap left when Medicaid and other insurance providers virtually eliminated the regular use of Quantitative Testing for treatment, Beechtree created a more robust screen. Where other labs are still running 8 to 12 analytes on an immunoassay machine, we've made a commitment to run a more robust HD Screen on our LC-MS machines which delivers greater than 99% accuracy and reduces the need for confirmations.

Using LC-MS technology we provide a more accurate Qualitative Test that separates medications from illicit substances while at the same time providing a tool for medication management. This leap in new science and technology bridges the gap between Qualitative and Quantitative Testing for treatment, medication management, employment and court ordered testing.



MEDICATION MONITORING FOR PAIN MANAGEMENT

Providers have several treatment options to manage patient pain. Each option has a different set of pros and cons. This complexity makes it no longer safe for providers to base medical decisions on subjective data, providers are now relying more and more on objective clinical data to adjust treatment decisions.

Beechtree Diagnostics test reports provide the data points needed to identify safe, effective treatment options through an easy to read

summary of the patients previous test results. Medical professionals can easily monitor medications, manage medication levels, and understand potential drug interactions using revolutionary test reporting based on cutting edge technology.

Beechtree test reports – paired with clinical expertise – provide critical information about medications, substance use, and when present, medication abuse.

Determine medication usage.

Determine recent and ongoing use of prescribed and non-prescribed medications, as well as illicit substances.

Determine current levels.

Detect interaction with other medications used by the patient.

Create care plans based on clinical data.

Our medical training staff can help your team understand how proper usage of urine toxicology testing can become a valuable tool for better patient care and risk mitigation.

URINE DRUG TESTING (UDT) FOR ADDICTION TREATMENT

Drug testing has become an integral part of drug treatment programs for patient monitoring and evaluation in substance use treatment. Drug testing has become so common, the Federal government has established testing guidelines for treatment programs that are licensed by the U.S. Food and Drug Administration. Use test report data for the following:

- **Baseline data for admission and creation of the care plan.**
- **Information added to ASAM reports when establishing the need for care.**
- **Objective data to support Utilization reviews to demonstrate medication management and adherence to the treatment care plan.**
- **Data from the test can be used to objectively show compliance and medical necessity.**
- **Support for the patient assessment during evaluation of a substance use disorder (SUD) diagnosis.**
- **Clinical Data to create baseline levels and ongoing data in care plans.**
- **A screen to prevent potential adverse effects of pharmacotherapy.**
- **A way to monitor the patient's use of illicit substances or adherence to pharmacotherapy treatment for Substance Use Disorders (SUDs).**
- **A way to assess the efficacy of the treatment plan (i.e., level of care).**
- **A way to clinically manage a patient during care.**
- **A tool for program Clinical Outcomes and/or Outcome management.**

Beechtree Diagnostics urine toxicology testing may be used to document abstinence for legal matters, disability determinations, custody disputes, or reinstatement in certain professions (e.g., lawyers, healthcare providers, professional athletes, airline pilots).

URINE TOXICOLOGY TESTING FOR PATIENT CARE & LIABILITY PROTECTION

Urine toxicology testing is an important tool in evidence-based patient care. The types of clinical situations in which clinical drug testing can be used includes pain management with opioid medications, office-based opioid treatment, behavioral health when prescribing medications, such as anti-depressant therapy, and other situations when risk for substance use is present. Drug testing is used to monitor patients' prescribed medications, as patients may under-report drug use to medical professionals, making some patients' self-reports unreliable.

- **Can affect clinical decisions about a patient's substance use that affects other medical conditions.**
- **Increase or decrease medications based on clinical data, along with subjective self-reporting.**
- **Prevents dangerous medication interactions during surgery or other medical procedures.**
- **Identifies drug use or abuse in women who are pregnant, or who want to become pregnant for better patient care and practice liability protection.**
- **Monitoring of prescribing habits is increasing, our clinical data allows providers to manage their patients based on objective data. This allows providers to treat based on their individualized Care instead of fear of 'overprescribing'.**
- **Increases the safety of prescribing medications by identifying the potential for overdose or serious drug interactions.**
- **Helps the clinician assess the efficacy of the treatment plan and the current level of care for chronic pain management and Substance Use Disorders (SUDs).**
- **Helps clinicians assess patient use of anti-depressants or compliance with pharmacotherapy for psychiatric treatment.**
- **Verifies, contradicts, or adds to a patient's self-report or family member's report of substance use.**

Beechtree Diagnostics reports are designed to present data in a way that decreases the confrontational side of Urine Toxicology Testing. Our reports allow providers to ask questions about data and treat according to their patient's responses.

NEONATAL PATIENT CARE & LIABILITY PROTECTION

Urine Toxicology Testing for patient care and liability protection has become a necessity for a baseline, as the incidents of babies born with drug addiction continue to increase.

According to the CDC, the number of babies born with Neonatal Abstinence Syndrome (NAS) increased by 82% nationally from 2010 to 2017. Increases were seen for nearly all states and demographic groups. Seven newborns were diagnosed with NAS for every 1,000 newborn hospital stays. That is approximately one baby diagnosed with NAS every 19 minutes in the United States, or nearly 80 newborns diagnosed every day. In addition, the number of women with opioid-related diagnoses documented at delivery increased by 131% from 2010 to 2017.

<https://www.cdc.gov/pregnancy/opioids/data.html>

OBGYNs often require Urine Toxicology Testing during each patient's first visit to offer better neonatal care and counseling and to increase liability protection. Drug testing provides an opportunity to prevent harm to the woman and the fetus. During counseling, women are advised about the risks of alcohol, tobacco, and drug use to the fetus.

Urine Toxicology Testing and assessment of pregnant women can also identify a Substance Use Disorder (SUD) early enough for intervention in order to prevent, minimize, or at the very least prepare for serious problems for the fetus or neonate. Drug testing can be used to monitor abstinence throughout the pregnancy.



MEDICATION MONITORING FOR PSYCHIATRIC CARE

Many behavioral health medications have serious side effects and may be fatal when combined with some pain medications. Providers can no longer base medical decisions on subjective data. Providers need clinical data to mitigate the liability associated with prescribing psychiatric medications. Beechtree Diagnostics test reports provide the data points needed to identify safe, effective treatment options thru an easy to read chart summary of the patient test results.

Easily monitor medications and understand potential drug interactions using cutting edge technology and revolutionary test result reports. Beechtree test reports – paired with clinical expertise – provide critical information about medication, substance use, and when medication abuse.

Determine medication usage.

Determine current levels.

**Determine recent and ongoing use of
prescribed and non-prescribed
medications, as well as illicit substances.**

**Detect interaction with other medications
used by the patient.**

**Create care plans based
on objective data.**

Beechtree provides ongoing education describing how proper usage of urine toxicology testing can become a valuable tool for better patient care and risk mitigation.



BEECHTREE MOLECULAR

Beechtree Molecular offers a comprehensive solution for Covid-19 testing with a focus on the highest quality science, automation, and sub-24-hour turnaround times. Beechtree's solution provides CLIA compliant, scientifically reliable testing at a cost and speed that allows organizations to more accurately make decisions to manage the Covid-19 health crisis.



During the Covid-19 pandemic, Beechtree was invited to expand offices to Anchorage, Alaska to assist Governor Mike Dunleavy's effort of 'opening up' Alaska and getting people 'back to work' and children 'back to school'.

Beechtree has performed high throughput RT-PCR Testing since 2020 in our lab in Alaska, providing results for the State Municipalities, Airports, School Districts, Hospitals, Prisons, and the US Military. Beechtree has been in the forefront of helping people 'get back to work' by providing testing to commercial business including oil and gas, commercial fishing, and movie industries.

We've provided testing services in some of the most remote communities across Alaska and the Intermountain Region and have developed robust processes and logistics from all over the US supporting providers from Alaska to Virginia and California to Massachusetts.

Beechtree provides state-of-the-art high-throughput molecular testing for Covid-19 in both our Alaska and Utah laboratories. Our automated molecular test has the highest available sensitivity and specificity, which allows us to provide highly reliable test results within 24 hours.

Beechtree provides leading science with a 4 gene test to minimize false positive and negative results; 3 COVID targets and a fourth control to ensure the collection was valid. We have >99% Sensitivity and Specificity, guaranteed sub 24 hour turnaround time, with an average well under 12 hours, and capacity for over 50,000 tests a day. All our positive samples go to the UT and AK State Labs for sequencing who have confirmed we detect all known variants of concern. We support the full set up for testing sites and providers to manage a highly efficient end to end process using our state-of-the-art web application. The QR Code technology streamlines the registration, testing, resulting and reporting processes.

We are proud to serve our clients with More Than a Test.



MORE THAN A TEST

**Beechtree delivers the very best
science, turnaround times, and client
service to help front line providers deliver
better patient outcomes.**



BEECHTREE
LABORATORIES

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