

A real Case Review go-home packet, exactly as one family received it the evening after their call. To protect the family, every name, place, date, test result and personal detail has been changed — the child here is “Leo” and every clinic and phone number is fictional. The structure, the test lists, the reasoning and the level of detail are exactly what they received. The orange circles mark what Plan B does for you.

Leo — Action Items

From the call with Rachel · Plan B for PANS · one thing at a time; items 1–4 are this week

© **What Plan B did here: the at-home tests you can order tonight, with no doctor: exactly which ones, where, the cost, and how to collect them so they read true.**

1 · ORDER YOUR TWO KITS — TONIGHT (NO DOCTOR NEEDED)

□ **Yasko — hair + genetics.** holisticheal.com → Hair Tissue Mineral Analysis + Genetics (saliva). ~\$500, Dr. Yasko's read included. No signature. His earlier genetics are *not* the Yasko panel; this is.

□ **Kryptopyrroles (HPL) — urine, self-order. DHA Laboratory —** dhalab.com → "Kryptopyrrole Quantitative Urine Test," ~\$80–95, kit ships to you, no practitioner needed. Results 1–2 weeks.

Collection: first-morning urine, the morning of the blood draw or any morning that week. **Protect from light** (wrap the cup in foil the second it's collected), **freeze immediately**, ship on ice Mon–Wed only. Pyrroles degrade in light and heat — a warm or exposed sample reads falsely low.

© **What Plan B did here: every test that applies to this child, with the insurance code and the reason for each, ready for the doctor to sign in minutes. Plus the backup if the doctor won't.**

2 · GET THE REQUISITION SIGNED

□ Email Dr. Patel the lab request (letter + coded list + send-outs + why-each-test).

□ No answer in 5 days → **Sesame Care** (sesamecare.com, \$30–50 telehealth) signs the same list the same day.

2A • THE LIST FOR DR. PATEL — LABCORP / QUEST, ONE DRAW (PRINT THIS PAGE FOR THE DOCTOR)

FOR THE REQUISITION: PEDIATRIC, NEEDLE-AVERSE, 53 lb — ONE VENIPUNCTURE, ALL TUBES THIS DRAW, PEDIATRIC MICROTUBES. Draw T Lab + IGeneX tubes first. Whole-blood histamine and homocysteine: lavender EDTA, ON ICE immediately. RBC zinc, plasma zinc, serum copper: royal-blue trace-element tubes (RBC zinc, not serum). **CIRS tubes (MSH, TGF- β 1, C4a, VIP): lavender EDTA, C4a and VIP drawn on ice, all spun and FROZEN within 1 hour — LabCorp only; if the ordering lab is Quest, put the CIRS set on a separate LabCorp requisition drawn the same morning.** No antihistamines 72 h before draw. Primary diagnosis codes: **D89.89 • F42.9 • R32 • R25.1 • R76.8 • R63.0**

Test	CPT	ICD-10
Strep & infection		
ASO titer	86060	F42.9, R32
Anti-DNase B	86215	F42.9, R25.1
Mycoplasma pneumoniae IgM + IgG	86738 ×2	F42.9, B96.0
EBV: VCA IgM, VCA IgG, EBNA IgG, EA IgG	86663, 86664, 86665	B27.90
HHV-6 IgG	86790	R56.9
Coxsackie A + B antibodies	86658	B34.1, F42.9
ANA with reflex	86038	R76.8, D89.89
Anti-NMDA receptor antibody, serum	86255	G04.81, R56.9, R25.1
Immune function		
IgG, IgA, IgM quantitative	82784 ×3	D80.9, D89.89
IgG subclasses 1–4	82787	D80.3
Pneumococcal IgG antibodies, 23 serotypes (LabCorp 163113 / Quest 34478)	86317	D80.9
Methylation & minerals		
Whole-blood histamine — lavender, ON ICE (LabCorp 006080 / Quest 4053)	83088	E72.19, F42.9
Homocysteine — lavender, ON ICE	83090	E72.11
RBC zinc + plasma zinc — royal-blue	84630 ×2	E60, R63.0
Serum copper — royal-blue	82525	E83.00
Ceruloplasmin	82390	E83.00
RBC folate • serum folate • B12 • methylmalonic acid	82747, 82746, 82607, 83921	E53.8
RBC magnesium	83735	E61.2
MTHFR C677T / A1298C (LabCorp 511238 / Quest 17750)	81291	E72.19
Inflammation, iron, nutrition, thyroid		
CBC with differential + platelets	85025	D64.9, R63.0

Ferritin · iron · TIBC · % saturation	82728, 83540, 83550	D50.9
hs-CRP	86140	R79.82
Vitamin D 25-OH	82306	E55.9
TSH · free T4 · TPO antibody	84443, 84439, 86376	E03.9, E06.3
Hemoglobin A1c	83036	R73.09
Allergy & histamine		
Total IgE	82785	T78.40, J30.9
Allergen-specific IgE: dust mite (D. pteronyssinus, D. farinae), Aspergillus, Penicillium, Alternaria, Cladosporium, cat, dog, grass mix, tree mix, weed mix, peanut, tree-nut mix, milk, egg, wheat	86003 each	J30.89, T78.1, L20.9
Tryptase	83520	D89.40
DAO (diamine oxidase) — LabCorp 123024 send-out	send-out	E88.09
Mold / CIRS — Shoemaker panel — OPTIONAL BUT STRONGLY ENCOURAGED. These are the tests that say whether his <i>body</i> is in the mold-inflammation response (CIRS) or just exposed — which decides the whole mold plan. They need FROZEN handling (spun and frozen within 1 hour; LabCorp only for MSH). If the draw site can't freeze, drop this block rather than the draw — but if they can, get it.		
HLA-DR/DQ haplotype (DRB1, DQB1, DRB3/4/5)	81375 / 81377	T75.89XA, Z77.120
MSH (alpha-MSH) — lavender, FROZEN (LabCorp 010421)	83519	E34.9, T75.89XA
TGF-β1 — lavender, FROZEN (LabCorp 502301)	83520	D89.89
C4a — lavender, drawn on ice, FROZEN (LabCorp 004556)	86160	D89.89
MMP-9	83520	D89.89
VEGF	83520	D89.89
VIP — lavender, on ice, FROZEN	83520	E34.9
ADH + serum osmolality (paired, same draw)	84588, 83930	E23.2, R32
Leptin	83520	E88.9
Anti-gliadin IgA + IgG	83516	K90.0
Cultures — same visit		
Throat culture, Group A strep (culture, not rapid)	87081	J02.0, Z87.19
Nares culture, staph/strep with sensitivities (MARCoNS if offered)	87070	J34.89
Household throat cultures — both parents + sibling, each under their own name	87081	Z20.818

Also signed by the same doctor (send-outs, next section): T Lab Tick-Borne Disease Panel · IGeneX Bartonella panel, Lyme ImmunoBlot, Babesia FISH · Mosaic MycoTOX + OAT. **If insurance denies any single test, the lab holds the tube and runs it self-pay — nothing is dropped from the draw.**

© What Plan B did here: which specialty labs to order from, with test numbers, how the doctor orders, and where the kit ships.

2B · TICK-BORNE: WHAT TO TELL THE DOCTOR TO ORDER — HAND THEM THIS

Order BOTH labs, same draw. Leo may not make antibodies well (that's why immunoglobulins are on the list), so an antibody-based test alone can be falsely negative in exactly this child. T Lab looks for the organism directly; IGeneX looks for antibodies plus FISH. Two independent methods on one stick means a negative actually rules it out and a positive is confirmed — and there is no second draw with this kid. Combined cost ~\$750–1,000 cash.

T Lab (Tick-Borne Laboratory) · Georgia · tlab.com

- **How it works:** the provider registers at tlab.com and orders; the kit ships to the family; draw with the other tubes; overnight back in the prepaid box. Results ~2 weeks.
- **Order:** the **Tick-Borne Disease Panel** (direct detection — blood smear/FISH-type staining) covering **Borrelia, Bartonella, Babesia, Ehrlichia/Anaplasma**. If à la carte: Bartonella + Borrelia + Babesia at minimum.
- **Codes:** A44.9 · A69.20 · B60.0 · R45.851 · F42.9
- **Specimen:** per kit (lavender EDTA); draw with the IGeneX tubes, first. Room temp, ship Mon–Thu.
- **Cost:** ~\$250–350 cash.

IGENEX — SAME REQUISITION DAY

IGeneX, Inc. · Milpitas, CA · igenex.com · (800) 832-3200 · fax (650) 424-1196

- **How it works:** the provider creates an account at igenex.com (5 minutes) or fills out the IGeneX Test Requisition Form (downloadable on the site) and faxes it. IGeneX ships the collection kit to the provider or directly to the family — **ask them to ship to Jenna**. Draw happens with the other tubes; kit ships back overnight in the prepaid box. Results to the provider in ~2–3 weeks.
- **Order these three, by IGeneX test name:**
 1. **Bartonella Panel — Test #650: Bartonella FISH + Bartonella ImmunoBlot IgM & IgG** (if they offer only components: FISH #605 and ImmunoBlot IgM/IgG #700/#701).
 2. **Lyme ImmunoBlot IgM + IgG — Test #190 (IgM) and #191 (IgG);** add **Lyme FISH #611** if the panel version is available.
 3. **Babesia FISH — Test #504** (covers *B. microti* + *B. duncani*).

If the provider prefers a bundle: the "**Tick-borne Complete Panel**" or "**Lyme + Co-infection ImmunoBlot Panel**" covers all of the above and more; either is fine. Test numbers change occasionally — the names don't.

- **Diagnosis codes for the form:** A44.9 (Bartonellosis, unspecified) · A69.20 (Lyme disease, unspecified) · B60.0 (Babesiosis) · R45.851 · F42.9 · R25.1
- **Clinical note for the form (one line):** "7 y/o with post-infectious neuropsychiatric syndrome (OCD, tics, incontinence, rage, suicidal ideation), anti-dopamine D1 receptor Ab 29 (≤ 10), summers in wooded the woods up north; tick-borne never tested."
- **Specimen:** ~3–4 tubes per the kit (lavender EDTA for FISH, red/SST for ImmunoBlot). Draw these and the T Lab tubes FIRST. Room temperature, ship same day Mon–Thu.
- **Cost:** ~\$450–700 cash, paid to IGeneX; superbill provided for out-of-network claims.

MOSAIC DIAGNOSTICS — URINE, THE DOCTOR ORDERS

Mosaic Diagnostics · Lenexa, KS · mosaicdx.com · (913) 341-8949

- **Order:** **MycoTOX Profile** (urine mycotoxins — repeat of the last year's panel, trend line for the house) + **Organic Acids Test (OAT)** — one requisition, one urine collection, one box. Mosaic ships the kit to the family; first-morning urine; freeze; ship Mon–Wed in the prepaid box.
- **Codes:** T65.91XA / Z77.120 (mycotoxin exposure) · E88.9 · F42.9 · R63.0
- **Cost:** MycoTOX ~\$300, OAT ~\$300, cash; superbill for out-of-network.

- If the doctor prefers, RealTime Labs runs the same mycotoxin panel; Mosaic is preferred because OAT + MycoTOX come from one cup.

© What Plan B did here: a finished letter to the child's doctor, with the history and the request. The parent just copies and sends it.

2D · COPY-PASTE LETTER TO DR. PATEL — EVERYTHING IN ONE MESSAGE

Select from "Subject" to "Jenna," copy, paste into email or the the clinic portal. It contains the blood list, the three doctor-ordered kits with how to order them, what you're ordering yourself, and the handling line.

Subject: Leo M. (DOB 2/14/2019) — one-draw lab requisition

Dear Dr. Patel,

Thank you for seeing Leo earlier this year. Since then we've had his whole record — birth to now — read end to end, and it showed something I hadn't seen laid out before: every one of his big regressions sits a few days after a fever. Last spring (the accidents and the first real rage began a few days after a high fever), again in the winter, and again in the fall (the separation panic started the week he went back to school after a sore-throat fever). Each time he was sweet and calm while sick, and worse a day or two after. His recent neural panel showed the anti-dopamine D1 antibody at about three times the reference, with strep and EBV markers positive. What we've never had is the bloodwork that would tell us what's driving it. We'd like to get all of it in ONE draw. Leo is severely needle-averse — his last blood draw went very badly — so we can't do this in pieces. We plan to draw at Lakeview Children's outpatient lab (certified autism center, child life on site), and I'll ask you separately about premedication for the morning.

I'm asking for four things:

1. ONE LabCorp requisition for the list below (LabCorp, not Quest — Quest can't run MSH), with this handling note printed on it: PEDIATRIC, NEEDLE-AVERSE, 53 lb — ONE VENIPUNCTURE, ALL TUBES THIS DRAW, PEDIATRIC MICROTUBES. Draw T Lab + IGeneX tubes first. Whole-blood histamine and homocysteine: lavender EDTA, on ice immediately. RBC zinc, plasma zinc, serum copper: royal-blue trace-element tubes (RBC zinc, not serum). CIRS tubes (MSH, TGF- β 1, C4a, VIP): lavender, C4a and VIP on ice, CENTRIFUGED AND FROZEN WITHIN 1 HOUR of the draw. No antihistamines 72 h before draw.
(The Mold/CIRS block on the list is optional but strongly encouraged — please include it if the draw site can freeze specimens; if not, omit that block rather than the draw.)
Primary diagnosis codes: D89.89, F42.9, R32, R25.1, R76.8, R63.0.
2. Three send-out kits ordered under your name (kits ship to us; we draw/collect with everything else and mail them back):
 - T Lab (tlab.com) — Tick-Borne Disease Panel (direct detection: Borrelia, Bartonella, Babesia, Ehrlichia/Anaplasma). Register at tlab.com or fax their requisition. ~\$250–350 cash. Codes A44.9, A69.20, B60.0, R45.851.
 - IGeneX (igenex.com, 800-832-3200, fax 650-424-1196) — Bartonella Panel #650 (FISH + ImmunoBlot IgM/IgG), Lyme ImmunoBlot IgM #190 + IgG #191, Babesia FISH #504. Provider account at igenex.com or their downloadable requisition, faxed; ask them to ship the kit to us. ~\$450–700 cash. Codes A44.9, A69.20, B60.0. One-line note for the form: "7 y/o post-infectious neuropsychiatric syndrome (OCD, tics, incontinence, rage, SI), anti-D1 receptor antibody ~3 $\times$ reference, summers in wooded the woods up north; tick-borne never tested."
 - Mosaic Diagnostics (mosaicdx.com, 913-341-8949) — MycoTOX Profile + Organic Acids Test, one urine requisition, kit to us. ~\$300 each, cash. Codes T65.91XA, Z77.120, F42.9, R63.0.
3. Two things we are ordering ourselves, so you know they're coming: Yasko hair mineral + genetics (holisticheal.com) and a DHA Laboratory urine kryptopyrrole test (dhalab.com). I'll upload the results to his file with everything else.
4. If insurance denies any single test, please have the lab hold the tube and run it self-pay rather than drop it — a second draw is not an option for this child.

THE LABCORP LIST — one draw

STREP & INFECTION

- ASO titer — CPT 86060 — F42.9, R32
- Anti-DNase B — CPT 86215 — F42.9, R25.1
- Mycoplasma pneumoniae IgM + IgG — CPT 86738 $\times$ 2 — F42.9, B96.0
- EBV: VCA IgM, VCA IgG, EBNA IgG, EA IgG — CPT 86663, 86664, 86665 — B27.90

- HHV-6 IgG — CPT 86790 — R56.9
- Coxsackie A + B antibodies — CPT 86658 — B34.1, F42.9
- ANA with reflex — CPT 86038 — R76.8, D89.89
- Anti-NMDA receptor antibody, serum — CPT 86255 — G04.81, R56.9, R25.1

IMMUNE FUNCTION

- IgG, IgA, IgM quantitative — CPT 82784 ×3 — D80.9, D89.89
- IgG subclasses 1–4 — CPT 82787 — D80.3
- Pneumococcal IgG antibodies, 23 serotypes (LabCorp 163113 / Quest 34478) — CPT 86317 — D80.9

METHYLATION & MINERALS

- Whole-blood histamine — lavender, ON ICE (LabCorp 006080 / Quest 4053) — CPT 83088 — E72.19, F42.9
- Homocysteine — lavender, ON ICE — CPT 83090 — E72.11
- RBC zinc + plasma zinc — royal-blue — CPT 84630 ×2 — E60, R63.0
- Serum copper — royal-blue — CPT 82525 — E83.00
- Ceruloplasmin — CPT 82390 — E83.00
- RBC folate · serum folate · B12 · methylmalonic acid — CPT 82747, 82746, 82607, 83921 — E53.8
- RBC magnesium — CPT 83735 — E61.2
- MTHFR C677T / A1298C (LabCorp 511238 / Quest 17750) — CPT 81291 — E72.19

INFLAMMATION, IRON, NUTRITION, THYROID

- CBC with differential + platelets — CPT 85025 — D64.9, R63.0
- Ferritin · iron · TIBC · % saturation — CPT 82728, 83540, 83550 — D50.9
- hs-CRP — CPT 86140 — R79.82
- Vitamin D 25-OH — CPT 82306 — E55.9
- TSH · free T4 · TPO antibody — CPT 84443, 84439, 86376 — E03.9, E06.3
- Hemoglobin A1c — CPT 83036 — R73.09

ALLERGY & HISTAMINE

- Total IgE — CPT 82785 — T78.40, J30.9
- Allergen-specific IgE: dust mite (D. pteronyssinus, D. farinae), Aspergillus, Penicillium, Alternaria, Cladosporium, cat, dog, grass mix, tree mix, weed mix, peanut, tree-nut mix, milk, egg, wheat — CPT 86003 each — J30.89, T78.1, L20.9
- Tryptase — CPT 83520 — D89.40
- DAO (diamine oxidase) — LabCorp 123024 send-out — CPT send-out — E88.09

MOLD / CIRS — SHOEMAKER PANEL — OPTIONAL BUT STRONGLY ENCOURAGED. THESE ARE THE TESTS THAT SAY WHETHER HIS BODY IS IN THE MOLD-INFLAMMATION RESPONSE (CIRS) OR JUST EXPOSED — WHICH DECIDES THE WHOLE MOLD PLAN. THEY NEED FROZEN HANDLING (SPUN AND FROZEN WITHIN 1 HOUR; LABCORP ONLY FOR MSH). IF THE DRAW SITE CAN'T FREEZE, DROP THIS BLOCK RATHER THAN THE DRAW — BUT IF THEY CAN, GET IT.

- HLA-DR/DQ haplotype (DRB1, DQB1, DRB3/4/5) — CPT 81375 / 81377 — T75.89XA, Z77.120
- MSH (alpha-MSH) — lavender, FROZEN (LabCorp 010421) — CPT 83519 — E34.9, T75.89XA
- TGF-β1 — lavender, FROZEN (LabCorp 502301) — CPT 83520 — D89.89
- C4a — lavender, drawn on ice, FROZEN (LabCorp 004556) — CPT 86160 — D89.89
- MMP-9 — CPT 83520 — D89.89
- VEGF — CPT 83520 — D89.89
- VIP — lavender, on ice, FROZEN — CPT 83520 — E34.9
- ADH + serum osmolality (paired, same draw) — CPT 84588, 83930 — E23.2, R32
- Leptin — CPT 83520 — E88.9
- Anti-gliadin IgA + IgG — CPT 83516 — K90.0

CULTURES — SAME VISIT

- Throat culture, Group A strep (culture, not rapid) — CPT 87081 — J02.0, Z87.19
- Nares culture, staph/strep with sensitivities (MARCoNS if offered) — CPT 87070 — J34.89
- Household throat cultures — both parents + sibling, each under their own name — CPT 87081 — Z20.818

Below the list is a short note on why each test matters for Leo, in case it's useful for your chart. If anything doesn't fit your judgment I'd rather you strike a line than skip the draw.

Thank you for helping us do this once, and do it right.

Warmly,
Jenna

© **What Plan B did here: we find the closest pediatric phlebotomists and children's-hospital labs near you who are good with frightened kids and can draw everything in one stick, with names, phone numbers, and exactly what to say when you call.**

3 · BOOK THE DRAW — IT HAS TO BE A PLACE THAT WILL DRAW EVERYTHING IN ONE SITTING

LabCorp and Quest patient service centers will NOT draw the IGeneX or T Lab kits — they only draw their own requisitions. So the draw can't happen at a PSC. It has to be one of the three places below, each of which draws the LabCorp tubes AND the two kits off one stick.

Option 1 — Lakeview Children's Hospital outpatient lab. Certified Autism Center, child-life specialists, pediatric phlebotomists who draw kids like Leo daily. Hospital labs do "courtesy draws" of outside kits when a provider orders them, and Lakeview Health can run most of the LabCorp list in-house or send it out.

- 100 Harbor Way, Lakeview · (555) 010-2200 · [lakeviewchildrens.example](#) · outpatient sites in Lakeview and Riverton — ask which has a lab with child life.
- **Ask scheduling exactly this:** "My 7-year-old is autistic and severely needle-averse — last blood draw went very badly. I have a provider's requisition of ~13 pediatric tubes including four that must be centrifuged and frozen within one hour of the draw, plus two mail-in kits (IGeneX and T Lab). Can you do a courtesy draw of the kits alongside the requisition, with your most experienced pediatric phlebotomist and a child-life specialist, first appointment of the morning?" If they say yes to all of it, this is the place.

Option 2 — a mobile phlebotomist who comes to the house. For Leo this is probably the best draw: home, no waiting room, Mom holding him, one sitting for everything — LabCorp tubes, IGeneX, T Lab — and they deliver the LabCorp tubes to the PSC themselves. \$75–150 a visit. Three that serve your area and draw children and specialty kits:

Who	Call	Why them
Dana Whitfield — Gentle Draw Mobile Phlebotomy	(555) 010-3311 · hello@gentledraw.example · gentledraw.example Mon–Fri 6am–6pm, Sat 7:30–9:30am	20 years (two regional hospitals and a military lab); solo practitioner so it's the same person every time; lists pediatric draws, special needs , and "specialty kits sent by your provider or testing company" — exactly this draw. 5.0 Google. Base is Riverton/Riverton; ask if she'll come to Lakeview (likely yes for a booked morning).
Little Arms Lab Services	(555) 010-4422 · info@littlearms.example · littlearms.example Mon–Fri 5am–3pm, Sat 5–11am	Team practice, covers Lakeview, Riverton, Riverton, Riverton; lists pediatric , special-needs , "specialty kit draws," research collections, and courier to the lab. Early hours = first-thing-in-the-morning draw at home.
Valley Mobile Draws	Riverton · via Yelp / Google "Valley Mobile Draws"	Covers Lakeview, Riverton, Riverton, Riverton. Third call if the first two can't do the date.

Say this when you call (all three): "My 7-year-old is autistic and severely needle-averse — his last blood draw went very badly. I have a provider's LabCorp requisition of ~13 pediatric tubes, plus two mail-in kits — IGeneX and T Lab — and four tubes that must be spun and frozen within an hour. Can you do all of it in one stick at our home, first thing in the morning? Do you carry a centrifuge and ice? And have you drawn autistic kids before — what do you do to make it go well?"

THE ONE HARD REQUIREMENT: the four CIRS tubes (MSH, TGF- β 1, C4a, VIP) must be centrifuged and frozen within ONE HOUR of the draw. The centrifuge/freezer answer decides it. Yes → book her, done. No → the four CIRS tubes (MSH, TGF- β 1, C4a, VIP) can't go this route; either drop them to a separate LabCorp requisition drawn at Lakeview Children's (a second stick), or — better — ask whether she can spin at your house and drive the frozen tubes straight to the LabCorp PSC on dry ice, which some mobile services do. If she says "the lab spins them," that's not good enough for MSH and C4a.

Option 3 — a doctor's office with its own phlebotomist (the pediatrician, or the immunologist — **not Dr. Patel; her practice is telehealth-only and doesn't draw**). Offices draw whatever the doctor orders, kits included; the LabCorp courier picks up their tubes. Same centrifuge/freezer question as above. Good if the pediatrician will let you set up a child-life-style draw in their exam room.

If he needs help getting through the draw — that's a conversation with his pediatrician, not a list from us. PANS kids are immune-sensitive and Leo has a long anesthesia exposure in infancy. **Plan B does not recommend sedatives or gases, and nitrous oxide is off the table entirely** (it depletes B12 and stresses methylation in exactly this kind of child). What we do recommend is the setting: numbing cream on both arms 60 minutes before (LMX 4% / EMLA — ask the pediatrician), a mobile phlebotomist at home or a child-life room at Lakeview Children's, comfort hold, and the prep below. If the pediatrician believes premedication is needed for a single draw, that is their call to make with you, with his full history in front of them. Whatever they decide goes in the tracker that night with how he was for 48 hours after.

© **What Plan B did here: the vial count, how much blood, why one stick is safe, and the order to draw so nothing is lost if the child can't sit still.**

4 • DRAW DAY — VIALS, ONE STICK, SPECIAL HANDLING

Night before / morning of — fasting and prep

- **Fast 8–10 hours: nothing but water after dinner.** Iron, homocysteine, zinc, copper, leptin, glucose and the ADH/osmolality pair all need it; everything else doesn't care. Draw at 7–8 am; breakfast in the car the second the needle's out.
- **Water, lots.** A big glass at bedtime and another an hour before — it's also what keeps his vein open for 20 tubes.
- **Nothing that morning:** no supplements, no zinc for 24 h, no iron, no antihistamines for 72 h, no Hyoscyamus (stopped). Regular prescription meds only if the pediatrician says so.
- **First-morning urine** into the Mosaic cup and the DHA cup (foil, freeze) before anything else. Hair sample cut the night before per Yasko.
- **Numbing cream** (LMX 4% / EMLA) on both arms 60 minutes before, covered with plastic wrap.
- Tell him the night before, once, plainly. Name the reward before you walk in (or before the phlebotomist rings the bell). Let him pick the arm, the sticker, the show.

How much blood, and is one stick safe for a 53-lb seven-year-old?

- **About 18–20 tubes, ~30–35 mL total:** T Lab kit 2–3 adult tubes (~8 mL) · IGeneX kit 3–4 adult tubes (~10–12 mL) · LabCorp ~13 pediatric microtubes at 0.5–1 mL each — 2 lavender on ice (histamine, homocysteine) · 1 lavender (CBC, RBC folate, RBC Mg, A1c, MTHFR, HLA) · 2 royal-blue (RBC zinc; plasma zinc + copper) · 3–4 lavender frozen (MSH, TGF- β 1, C4a, VIP) · 4–5 SST (chemistry/thyroid/iron/D · strep/Myco/EBV/immune · IgE panel/tryptase/DAO · ADH/leptin/gliadin/NMDAR/Coxsackie · osmolality).
- **Yes, it's safe.** Pediatric limit for a single draw is ~2.5% of blood volume — about 50 mL at 25 kg — and ~5% per month. 30–35 mL is under both. The limit isn't volume; it's **time with the needle in:** 18–20 tubes off one butterfly is

4–6 minutes with good flow. That's routine at a children's hospital lab with child life, and it's why Lakeview Children's, not a strip-mall PSC.

- **Three things that make it work:** (1) **order** — the adult kit tubes first while flow is strongest, then the microtubes, frozen ones last so they're spun immediately; (2) **hydration** — a big glass of water an hour before; a dehydrated kid's flow stops at tube 10; (3) **the priority list below** — if flow stops, it decides what's already in hand. Twelve tubes with the right ones beats a second attempt.
- **If the lab says 20 tubes is too many for one stick:** the answer is not two sticks. It's the right setting — home with a mobile phlebotomist, or a child-life room at Lakeview Children's — and anything beyond that is the pediatrician's decision, not ours.

Say this at check-in and hand them the requisition:

- **One venipuncture, all tubes, pediatric microtubes.** Numbing cream on both arms 60 minutes before.
- **IGeneX + T Lab tubes first** (4–5 adult tubes from the two kits) while the flow is best.
- **Whole-blood histamine + homocysteine → lavender EDTA, ON ICE the second it's drawn.** Room temperature ruins both.
- **CIRS tubes (MSH, TGF- β 1, C4a, VIP) → lavender, C4a and VIP on ice, CENTRIFUGED AND FROZEN WITHIN ONE HOUR of the draw — non-negotiable for these four; optional block, but if you're drawing them, this is the rule.** Ask at check-in: "Do you have a freezer for frozen send-outs?" If no, these go to a LabCorp PSC that does — same morning.
- **RBC zinc, plasma zinc, serum copper → royal-blue trace-element tubes.** Ask for RBC zinc — serum is the wrong test.
- **No antihistamines for 72 hours before.** No leucovorin, no new supplements.
- **If a tube runs short, priority:** T Lab + IGeneX → histamine/homocysteine → zinc/copper → strep/immune → MSH/C4a/TGF- β 1 → the rest. **Never a restick.**

☐ **Same visit:** throat culture + nares culture for Leo.

☐ **Same week:** throat swabs for you, your husband, and his brother (pediatrician or urgent care).

☐ **Same morning, at home:** first-morning urine — split into the Mosaic cup and the pyrrole cup (foil, freeze); hair sample per the Yasko instructions.

© **What Plan B did here: handling notes for the phlebotomist: which tubes go on ice, which get frozen within the hour, which stay out of the light. This is the step labs most often get wrong, and it voids the result.**

4B • EVERY TEST — WHAT HAS TO HAPPEN FOR IT TO COME BACK VALID

Hand this to the phlebotomist with the requisition. Anything marked **bold** is the step that, if skipped, voids the result and forces a restick.

Test	Tube	What has to happen
Send-out kits — draw FIRST		
T Lab Tick-Borne Panel	2–3 adult lavender (kit)	Fill to the line; invert 8×; room temp, do not refrigerate ; ship same day in kit box, Mon–Thu only .
IGeneX Bartonella / Lyme / Babesia	3–4 adult lavender + SST (kit)	Lavender for FISH, SST for ImmunoBlot; room temp ; overnight in prepaid box, Mon–Thu ; signed IGeneX requisition inside the box.
On ice the moment they're drawn		

Whole-blood histamine	Lavender EDTA	Into ice immediately ; keep cold; lab freezes on receipt. Warm for 30 min = falsely low. No antihistamines 72 h before.
Homocysteine	Lavender EDTA	On ice, spun within 1 hour ; RBCs keep making homocysteine at room temp → falsely high.
Frozen within the hour (CIRS — optional but encouraged): every tube in this block must be CENTRIFUGED AND FROZEN WITHIN 1 HOUR of the draw. "The lab will spin it later" voids these.		
MSH	Lavender EDTA	Spin cold, freeze plasma within 1 hour ; ships frozen to LabCorp Burlington. LabCorp only (010421).
TGF-β1	Lavender EDTA	Spin, freeze plasma ; frozen send-out (LabCorp 502301).
C4a	Lavender EDTA, drawn on ice	Chilled tube, spin cold within 30 min, freeze ; complement activates on the counter → falsely high. (LabCorp 004556)
VIP	Lavender EDTA, on ice	Spin cold, freeze plasma ; frozen send-out.
ADH + serum osmolality	Lavender (ADH, on ice, frozen) + SST (osm)	Both from the same draw or the pair is meaningless; ADH frozen.
Metal-free tubes		
RBC zinc	Royal-blue K2-EDTA (trace)	Must be the erythrocyte/RBC test — write "RBC zinc, not serum." Off zinc supplements 24 h.
Plasma zinc + serum copper	Royal-blue no-additive (trace)	Metal-free tube; ordinary SST contaminates. Draw after the lavenders (no EDTA carryover).
Standard — no special handling		
CBC · RBC folate · RBC magnesium · HbA1c · MTHFR · HLA-DR/DQ	Lavender EDTA	Room temp. Note RBC folate and RBC Mg are whole-blood tests — one lavender covers them.
Ceruloplasmin · ferritin · iron/TIBC · hs-CRP · vitamin D · B12 · serum folate · MMA · TSH · fT4 · TPO · leptin · MMP-9 · VEGF · anti-gliadin	SST (gold)	Clot 30 min, spin. Nothing special. No iron supplement before this draw.
ASO · anti-DNase B · Mycoplasma IgM/IgG · EBV panel · HHV-6 · Coxsackie · ANA · anti-NMDAR · IgG/IgA/IgM · IgG subclasses · pneumococcal titers	SST (gold), 1–2 tubes	Serology; room temp; pneumococcal and NMDAR are send-outs — the lab handles it.
Total IgE · allergen-specific IgE panel · tryptase · DAO	SST (gold)	Tryptase must be drawn at baseline (not mid-flare) ; DAO is a send-out (LabCorp 123024). No antihistamines 72 h.
No needle — same visit / same morning		
Throat culture (Group A strep)	Culture swab	Both tonsils + back of throat, firm; culture, not rapid . Household: same swab, each person's own requisition.
Nares culture (staph/strep, MARCoNS)	Culture swab	Deep in each nostril, 5 rotations; if MARCoNS specifically, the doctor orders the MicrobiologyDX kit.
Mosaic MycoTOX + OAT	Urine, kit cup	First-morning urine , before food/drink; freeze; ship Mon–Wed in the prepaid box. Off glycine/NAC supplements 48 h if any.
DHA kryptopyrroles	Urine, kit cup	First-morning; wrap in foil immediately; freeze immediately ; ship on ice Mon–Wed. Light or heat = falsely low.

Yasko hair + genetics	Hair (1 tbsp, nape) + saliva	Unwashed 24 h, no product; cut close to scalp; saliva swab per kit, 30 min after eating.
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5 • WHAT GOES WHERE

Route	Tests
Dr. Patel → LabCorp / Quest (insurance)	ASO, anti-DNase B · Mycoplasma IgM/IgG · EBV 4-marker · HHV-6 · ANA · IgG/IgA/IgM + subclasses + pneumococcal titers · whole-blood histamine · homocysteine · RBC + plasma zinc · copper · ceruloplasmin · RBC folate, folate, B12, MMA · RBC Mg · MTHFR · CBC · ferritin + iron panel · hs-CRP · vitamin D · TSH, fT4, TPO · A1c · total IgE + allergen panel (incl. molds) · tryptase · DAO · throat + nares cultures. Patel also signs the IGeneX form.
You order — no doctor	Yasko hair + genetics (saliva) · Kryptopyrroles urine (DHA Lab or Direct Labs).
Doctor orders — send-out	T Lab Tick-Borne Disease Panel + IGeneX Bartonella panel, Lyme ImmunoBlot, Babesia FISH (2b) · Mosaic MycoTOX + OAT (urine). Kits ship to you; draw/collect with everything else; you mail them back.
If insurance denies a test	The lab holds the tube and runs it self-pay. Don't drop it.

© **What Plan B did here: every route to get the tests signed if the child's doctor says no.**

5B • PLAN B IF DR. PATEL WON'T SIGN (OR WON'T SIGN ALL OF IT)

Leo is a minor, so direct-to-consumer labs (Ultrix, Walk-In Lab, Quest Direct) **won't draw him** — they're 18+. Every route below puts a clinician's signature on the same list. Take the first one that answers.

1. **Sesame Care** — sesamecare.com, "lab order" or pediatric telehealth visit, \$30–50, same day. Paste the coded list into the visit notes and upload a photo of the IGeneX requisition. They write the LabCorp/Quest requisition **and sign the IGeneX form** — that's the signature IGeneX requires. Fastest.
2. **The immunologist** who already called it PANDAS — send her the same list. Specialists sign comprehensive panels readily.
3. **Your pediatrician**, with the words "the immunologist requested these."
4. **A local functional/integrative MD or DO** — ifm.org/find-a-practitioner or pandasppn.org, Lakeview area. One \$250–400 visit orders everything including send-outs, and it's the doctor you'll want after results anyway.
5. **Rupa Health / Fullscript Labs** — any of the above can route the Mosaic and IGeneX kits through it: one order, one bill.
6. **Still no one to sign IGeneX?** — igenex.com/find-a-provider lists doctors who order through them; a single telehealth visit with one of them gets the tick-borne panel signed.

Who orders what: T Lab, IGeneX, Mosaic — the doctor (whoever signs the blood signs these). Yasko and pyrroles — you, tonight, no signature.

© **What Plan B did here: safety steps, and a medication problem caught and stopped the same day.**

6 • SAFETY + THE HOMEOPATHY QUESTION — THIS WEEK

- **Any talk of wanting to die** goes to Patel or the pediatrician this week, in writing. Sharps and medications secured.

- ☐ **His brother is separated before contact** every time Leo escalates. This is a door, not a behavior plan.

TODAY, before anything else on this list: STOP the daily Hyoscyamus. No dose tonight, none tomorrow, none until your homeopath has re-evaluated him.

As we discussed on the call: that remedy is meant to be given once and left alone for weeks. Six-plus weeks of daily dosing, with rage, biting and fight-or-flight all worse since it started, is a proving — he's producing the remedy's own symptoms. The fix is stopping. There is no withdrawal from a 30C; expect him to settle over one to two weeks as it clears.

Then text your homeopath: *"Leo has been on Hyoscyamus 30C daily for over six weeks and his rage, biting and fight-or-flight are worse since. We've stopped it as of [date]. Can you re-take his case before anything is given again?"*

Log the date of the last dose in the tracker today — it's the line everything after gets read against. Don't start any other remedy in the meantime.

© **What Plan B did here: we find your mold specialists: the best-qualified inspectors near you, what to ask them for, and the tools to check your own house this weekend.**

7 • THE HOUSE — MOLD

His accidents slowed during a week at his grandparents'. That's the experiment already run; now find the source.

Inspectors — best for the family's ZIP (Lakeview):

- **Tom Brennan, MS-IEP, CMI — Clearpath Indoor Environments** (the state capital; on the ISEAI indoor-environmental-professional list, iseai.org/iep-list). The only ISEAI-listed IEP in the state; he travels — ask.
- Local backups with moisture mapping + thermal imaging: **Lakeview Mold & Moisture** (Lakeview, lakeviewmold.example) · **Harbor Building Diagnostics** (Lakeview/Riverton, harborbuilding.example).
- Ask for: moisture mapping, thermal imaging, wall-cavity sampling on a new build, HVAC inspection. **Not an ERMI-only visit.**

Your own first pass this weekend (Amazon):

- **Thermal camera:** TOPDON TC001 (plugs into phone, ~\$200) — amazon.com/s?k=TOPDON+TC001 · budget: Klein Tools TI220 — amazon.com/s?k=Klein+TI220. Shows cold/wet spots behind drywall.
- **Moisture meter:** Klein Tools ET140 pinless (~\$35) — amazon.com/s?k=Klein+ET140 · General Tools MMD4E pin (~\$30) — amazon.com/s?k=General+Tools+MMD4E. Scan behind toilets, under sinks, the AC closet, exterior walls, window sills, the slab edge. Over 17% = wet.

- ☐ If found: remediate or move. If not found: two weeks in a known-clean rental with the tracker running, then two weeks home — the tracker tells you.

8 • BIOMAGNETISM — OPTIONAL, ALONGSIDE EVERYTHING ABOVE

- **Practitioner: Carla Reyes** — remote sessions. Contact: _____
- **Magnets:** MagnetRX neodymium biomagnetism set — amazon.com/dp/BoDS6F4W2Y
- **Painter's tape** — any brand, holds magnets on skin.
- **Non-slip headband** — amazon.com/dp/Bo9K3R6RFH (holds head placements).
- Honest framing: no evidence base; Rachel's own kids responded. Track rage, sleep, shirt-chewing, and appetite in the app before and after so you can tell whether it did anything.

© What Plan B did here: a food plan for a child who barely eats, built with Minta from the foods he'll already take.

9 • START THE TRACKER TODAY — AND START TALKING TO MINTA ABOUT FOOD

Food is the thing you can move this week while the labs are pending — and Minta is built for it.

- **Tonight:** open app.planbforpans.com/minta and tell her, in your words, everything he ate today and what he refused. Then ask: *"Leo barely eats. Build me a plan to get more calories and nutrition into him, starting from the foods he'll take."* She has his file — the picky-eater history, the safe foods, the carb-and-sugar pull, the appetite collapse this fall. She'll ask you a few questions and build a food-chaining plan: small steps from his safe foods outward, calorie-dense versions of what he already eats, what to hide in the yogurt, how to make the smoothie carry a meal.
- **Also open the Food Expander** on his page (app → Leo → "Picky eater? The Food Expander") — enter his safe foods and it generates the week-by-week ladder.
- **Track it, every day.** The tracker has an appetite slider — log what he actually ate (roughly) and how many refusals. After a week, ask Minta: *"What's working? What should I change?"* She reads the tracker; the plan adjusts to him. Bring the food log and the plan to the results call with Rachel — the zinc, iron, and pyrrole results will tell us *why* he can't eat, and the log tells us what's been tried.
- **The rules until results:** calories over nutrition; no pressure at the plate, no comments, plate wherever he'll eat it; kitchen open at fixed times, not all day; no new supplements. A hungry brain flares.

□ **Tracker:** app → Tracker → add to your phone. Accidents, tics, rage, sleep, **appetite** — one slider each, 30 seconds a night. Results plus a month of tracker is what turns labs into a plan.

10 • WHILE YOU WAIT (2–4 WEEKS)

- Food: the Minta plan from section 9, tracked daily. No new supplements, no iron, no folate until results.
- Drop hygiene battles to a baby-wipe minimum. Declarative language ("bath's running"), one thing at a time. This is a flare, not defiance.
- Read the 2017 PANS Consortium treatment guidelines abstract (search "Swedo Frankovich 2017 JCAP PANS"). Print it for the next doctor who says it isn't real.

11 • WHEN RESULTS LAND

- Upload every PDF — LabCorp, T Lab, IGeneX, Mosaic, DHA (pyrroles), Yasko — to Leo's file (the + in Minta).
- Book the results call with Rachel: what's driving it, what to treat first, which doctor for which piece, and — if the immune or tick tests come back the way his history predicts — the IVIG or antibiotic conversation with a real document in hand.

12 • ONE ASK FROM RACHEL

You said on the call you wanted to throw your energy behind something that would make an impact. Here's where it would land hardest:

- **Tell one parent about the Case Study.** Not a post — a person. The mom at drop-off whose kid changed overnight, the one in your PANS group who's on her fourth specialist. Send her to app.planbforpans.com/minta and tell her what today was like. Every family that comes through teaches the system something that helps the next one — including Leo.
- **Share the group.** facebook.com/groups/1329989715405433 — Plan B for PANS. Families are joining every week; the more who are in it, the faster the patterns show.
- **If you can find a way to help with funding — even pointing us toward someone — please do.** Plan B is a non-profit, and right now it runs on Rachel alone: every synthesis, every Minta conversation, every case study costs real money, and it's coming out of one family's pocket. Donations at app.planbforpans.com/donate. A grant lead, a foundation contact, a company that matches — anything you know from your world would help more than you'd guess.

None of this is a condition of anything. It's just where the leverage is.

Questions at 2 a.m. → Minta. Questions in daylight → Rachel. You have a team now.

Part 2 • The one-stick lab order sent with the packet, for the ordering doctor. Names, places and personal details changed.

Leo M. — One-Stick Comprehensive Lab Order

DOB 02/14/2019 • 7y 7m • 53 lb (24 kg) • the state • Ordering: Dr. Anna Patel (the clinic) • Prepared by Plan B for PANS for the family to bring to the ordering clinician. Every test below has a chart reason and an ICD-10 so it can be coded for coverage.

VIAL COUNT — ONE VENIPUNCTURE, PEDIATRIC MICROTUBES:
IGeneX: 3–4 adult tubes (their kit) — **draw first** • 2 Lavender EDTA (one ON ICE) • 2 Royal-blue trace-element (one K2-EDTA, one no-additive) • 3 Gold SST • 1 Lavender for MTHFR (can share tube 2 if lab allows). **≈ 10 tubes, ≈ 18–22 mL total** — well under the 50 mL single-draw limit for 25 kg.
Lab confirms exact tube types. Butterfly 23g. Numbing cream (LMX/EMLA) 60 min prior. First appointment of the day, pediatric-experienced phlebotomist, child-life if available.

SPECIMEN HANDLING — PRINT ON THE REQUISITION:
PEDIATRIC, SEVERELY NEEDLE-AVERSE, 53 lb — ONE STICK ONLY, ALL TUBES THIS DRAW, PEDIATRIC MICROTUBES. DRAW IGeneX TUBES FIRST. WHOLE-BLOOD HISTAMINE + HOMOCYSTEINE: LAVENDER EDTA, PLACE ON ICE IMMEDIATELY. RBC ZINC / PLASMA ZINC / SERUM COPPER: ROYAL-BLUE TRACE-ELEMENT (METAL-FREE) TUBES — RBC ZINC, NOT SERUM. NO ANTIHISTAMINES 72 h BEFORE DRAW. IF ANY TUBE IS SHORT, PRIORITIZE: IGeneX → HISTAMINE/HOMOCYSTEINE → ZINC/COPPER → SST #2 (strep/immune) → the rest.

Chart context (for the ordering clinician): Autism L2 baseline. Three infection-dated regressions — spring fever 5 days after a fall at school → onset of daily incontinence (normal urology) + first violent rage; two later fevers → calm while ill, marked behavioral worsening 1–2 days after recovery. Current: daily incontinence, new motor and vocal tics, just-right OCD, separation panic with rituals, appetite collapse, toe-walking, intrusive thoughts. Recent neural antibody panel: anti-dopamine D1 receptor elevated (~3× ref), Strep A IgG and EBV EA IgG mildly elevated. Urine mycotoxins positive last year. Symptoms ease in a different residence. Infant history: long anesthesia for an MRI in infancy; febrile illness after early vaccines. Never run: strep titers, immunoglobulins, tick-borne serology, RBC zinc, whole-blood histamine.

© What Plan B did here: every test imaginable that applies to this child, grouped by question, each with its code AND the reason it matters for him specifically.

PANEL A — STREP / INFECTIOUS TRIGGERS (GOLD SST)

TEST	CPT	ICD-10	WHY FOR LEO — THE CHART REASON
ASO titer	86060	F42.9 • R32 • Z87.19	Strep A IgG positive on the recent neural panel and a sore-throat fever preceded the fall regression, but ASO has never been measured. Establishes whether there is a recent/ongoing group A strep immune response driving a PANDAS presentation (OCD + tics + incontinence).
Anti-DNase B	86215	F42.9 • R25.1 • Z87.19	Rises later and persists longer than ASO; ~half of strep-driven PANDAS cases are anti-DNase-B-positive with a normal ASO. Both are required to rule strep in or out.
Mycoplasma pneumoniae IgM + IgG	86738 ×2	F42.9 • R25.1 • B96.0	Second most common PANS trigger; presents with tics and OCD without obvious respiratory illness. Three of his regressions followed "viral" febrile illnesses that were never characterized. IgM = current/recent; IgG = exposure. Never tested.

EBV panel: VCA IgM, VCA IgG, EBNA IgG, EA IgG	86663 · 86664 · 86665	B27.90 · R53.83	EBV EA IgG was elevated on the recent panel — early antigen positivity indicates reactivation, i.e. an immune system not containing a latent virus. The 4-marker panel distinguishes acute vs. reactivated vs. past infection and is the baseline for any antiviral decision.
HHV-6 IgG (± PCR)	86790	B10.89 · R56.9	Classic pediatric trigger of febrile seizures and encephalopathic staring/tensing episodes; he has had uncaptured staring/grinding/tensing spells (overnight EEG non-diagnostic). Never tested.
ANA with reflex titer/pattern	86038 (+86039)	R76.8 · D89.89	Neural-autoantibody panel positive on several targets incl. anti-D1 receptor 3× ref. A systemic autoimmune screen has never been run; positive ANA changes the specialist pathway (rheum/neuro-immunology).

© What Plan B did here: the immune tests that decide whether IVIG is on the table, which doctors almost never run.

PANEL B — IMMUNE COMPETENCE (GOLD SST) — THE "CAN HE CLEAR AN INFECTION?" QUESTION AND THE IVIG-ELIGIBILITY DOCUMENT

TEST	CPT	ICD-10	WHY FOR LEO
IgG, IgA, IgM quantitative	82784 ×3	D80.9 · D89.89 · Z87.19	Regresses after every infection, EBV reactivating, febrile illness in infancy with developmental regression after — the pattern of a child who cannot clear or regulate. Immunoglobulins have never been measured. Low IgG/IgA = primary immunodeficiency workup and the documented basis for IVIG as replacement, not just immunomodulation.
IgG subclasses 1–4	82787	D80.3 · D80.9	Total IgG can be normal while IgG2 or IgG3 is deficient — the specific-antibody-deficiency phenotype that hides in chronic-infection PANS kids. Required alongside total IgG.
Pneumococcal IgG antibodies, 23 serotypes	86317	D80.9 · Z23	Functional antibody response to polysaccharide antigens. Low titers despite vaccination = specific antibody deficiency (SPAD), the most common immune finding in refractory PANS, and an IVIG-qualifying diagnosis under most payers.

© What Plan B did here: methylation and minerals, the pieces the PANS field usually skips.

PANEL C — METHYLATION / WALSH BIOTYPE (LAVENDER ON ICE · ROYAL-BLUE · SST)

TEST	CPT	ICD-10	WHY FOR LEO
Whole-blood histamine — lavender, ON ICE	83088	E72.19 · F42.9	The Walsh methylation-biotype marker: high (>70 ng/mL) = undermethylation (OCD, perfectionism, ritual, seasonal allergy — his picture); low = overmethylation (anxiety, panic, sensory). Determines WHICH nutrient direction is safe — methylfolate helps one biotype and worsens the other (his leucovorin trial worsened him). Genetics (MTHFR A1298C het, MTRR het, COMT het) say "vulnerable"; this says which way. Never measured. Degrades at room temperature — must be chilled.

Homocysteine — lavender, ON ICE	83090	E72.11 · E53.8	Functional readout of the methylation cycle. Elevated = the cycle is stalled regardless of genotype; normal on no support = genes are compensated. Anchors every B12/folate/betaine decision. Never measured.
RBC zinc + plasma zinc — royal-blue K2-EDTA + royal-blue no-additive	84630 ×2	E60 · R63.0 · F50.82	Zinc is the Walsh cornerstone and the classic reversible driver of appetite loss and taste aversion (his appetite has collapsed; ARFID-range restriction). Serum zinc is insensitive; RBC zinc is the tissue marker. Also required to interpret copper. Never measured.
Serum copper — royal-blue	82525	E83.00 · F42.9	With ceruloplasmin gives % free (unbound) copper. Elevated free copper drives anxiety, rage, OCD, tics and is treatable (zinc, molybdenum, B6). Walsh copper-overload biotype overlaps his presentation. Never measured.
Ceruloplasmin	82390	E83.00	Required to compute free copper; also the acute-phase copper carrier. Without it serum copper cannot be interpreted.
RBC folate · serum folate · B12 · methylmalonic acid	82747 · 82746 · 82607 · 83921	E53.8 · E53.9	Tissue and serum folate status (he was given leucovorin blind for a month); B12 with MMA (functional B12 — serum B12 can be normal while tissue-deficient; MTRR het + gestalt/hyperlexic profile). Sets the Yasko/Walsh nutrient plan on data.
RBC magnesium	83735	E61.2 · R25.1	Tissue magnesium (serum is unreliable). Tics, restless sleep, early waking, muscle tension all magnesium-responsive; he currently needs magnesium to sleep. Baseline before dosing.
MTHFR C677T + A1298C (clinical PCR)	81291	Z13.79 · E72.19	A recent consumer panel shows A1298C heterozygous; a clinical-grade confirmation on the same stick is cheap and avoids relying on a wellness-lab genotype for prescribing decisions.

PANEL D — INFLAMMATION, IRON, NUTRITION, THYROID (LAVENDER · SST)

TEST	CPT	ICD-10	WHY FOR LEO
CBC with differential + platelets	85025	D64.9 · R63.0	Anemia (appetite/fatigue), infection pattern, eosinophils (allergy), basophils (Walsh methylation clue), platelets/WBC (tick-borne screen). No CBC on file since he has been eating poorly.
Ferritin · iron · TIBC · % saturation	82728 · 83540 · 83550	D50.9 · R63.0	Iron deficiency causes restless sleep, tics, appetite loss, cognitive fog; he has all four. FULL panel with CRP is required BEFORE any iron: in a child with possible infection load, low ferritin can be protective sequestration and free iron can feed the pathogen. If deficient → lactoferrin, not free iron.
hs-CRP	86140	R79.82 · D89.89	Systemic inflammation baseline; interprets ferritin (acute-phase reactant) and tracks response to treatment.
Vitamin D 25-OH	82306	E55.9	Immune regulation; PANS Consortium target >30 (ideally 50–70). Mold-exposed, indoor, poor eater — likely low. Never measured.
TSH · free T4 · TPO antibody	84443 · 84439 · 86376	E03.9 · E06.3	Thyroid autoimmunity co-occurs with neural autoimmunity; mycotoxins suppress thyroid function; constipation/fatigue/appetite overlap. Never measured.

HbA1c	83036	R73.09	Carb/sugar-only intake for months; glycemic swings drive rage and fog. Baseline.
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PANEL E — HISTAMINE, ALLERGY, MAST CELL (SST) — ANSWERS THE H1/H2 QUESTION

TEST	CPT	ICD-10	WHY FOR LEO
Total IgE	82785	T78.40 · J30.9	Is this an allergic (IgE) child? Confirmed peanut allergy; mold-exposed; shirt-chewing, nose-picking, congestion. High total IgE = atopic driver → H1 antihistamine is appropriate.
Allergen-specific IgE panel	86003 per allergen	J30.89 · L20.9 · T78.1	Dust mite (D. pteronyssinus, D. farinae) · Aspergillus fumigatus · Penicillium · Alternaria · Cladosporium (mold sensitization in a mycotoxin-positive child living in a suspect house) · cat · dog · grass, tree, weed mixes · peanut · tree-nut mix · milk · egg · wheat. Names the exposures to remove and tells the allergist whether immunotherapy is on the table.
Tryptase	83520	D89.40	Mast-cell activation screen. Rage, flushing, GI, sleep disruption, sensory hypersensitivity after exposures = MCAS pattern. Elevated → H1 + H2 blockade + mast-cell stabilizer is the indicated approach, not antihistamine alone.
DAO (diamine oxidase)	send-out (e.g. Dunwoody / LabCorp 123024)	E88.09	Low DAO + high whole-blood histamine + normal IgE = histamine intolerance (can't degrade dietary histamine) — treated with DAO enzyme and low-histamine diet, not antihistamines. Separates the three histamine stories.

How Panel E + whole-blood histamine answer "does he need H1/H2?": IgE high + specific IgE + → allergy → H1 (levocetirizine/cetirizine). IgE normal + histamine high + DAO low → histamine intolerance → DAO with meals, low-histamine diet, methylation support; H1 for symptoms only. Tryptase high → mast cell → H1 + H2 (famotidine) + cromolyn/quercetin, practitioner-managed. **Hold all antihistamines 72 h before the draw** or the histamine result is invalid.

PANEL F — TICK-BORNE (IGENEX KIT — FAMILY ORDERS; CLINICIAN SIGNS THE IGENEX REQUISITION; DRAW THESE TUBES FIRST)

TEST	IGENEX CODE	ICD-10	WHY FOR LEO
Bartonella FISH + ImmunoBlot IgM/IgG	IGeneX Bartonella panel	A44.9 · F42.9 · R45.851	Summers in wooded the woods up north; rage, intrusive thoughts, suicidal statement at 7, sleep disruption, "equalizing" compulsion — the Bartonella-neuropsychiatric signature (O'Hara: ~40% of PANS practice). Conventional labs miss it; FISH visualizes organism. Never tested.
Lyme ImmunoBlot IgM/IgG	IGeneX Lyme ImmunoBlot	A69.20 · R25.1	Same exposure; motor findings (foot inversion, toe-walking, clumsiness) and tics. Standard 2-tier testing misses pediatric neuro-Lyme; ImmunoBlot is the sensitive assay.
Babesia FISH	IGeneX Babesia FISH	B60.0	Co-infection of Lyme/Bartonella in the same tick; night sweats, air hunger, sleep fragmentation. Rule out while the kit is open.

© What Plan B did here: the swabs and urine tests done the same morning, so the child is only stuck once.

SAME VISIT — NO NEEDLE

TEST	KIT / WHERE	WHY
Urine mycotoxin panel (repeat)	RealTime Labs or Mosaic MycoTOX (first-morning urine)	last year's positive; symptoms remit away from the house. Confirms ongoing exposure and gives the trend line for remediation/binders.
Urine organic acids (OAT)	Mosaic or US BioTek	Neurotransmitter turnover (HVA, quinolinic — neuroinflammation), yeast/clostridia markers, mitochondrial and methylation functional markers, B6 status. The Yasko/Walsh functional overlay on the genetics.
Urine kryptopyrroles (HPL)	Mosaic or DHA Labs — light-protected, frozen	Walsh pyrrole disorder: zinc + B6 loss under stress → anxiety, rage, poor stress tolerance, appetite loss, nail-biting. Fits; never tested.
Hair tissue mineral analysis	Yasko (bundled with her genetics read) or Doctor's Data	Long-window mineral/toxic-metal status; required for the Yasko protocol; no needle.
Throat culture (not rapid) + nares culture	Any PSC / pediatrician	Strep carriage (throat) and staph/MARCoNS (nose). Swab the household too — ~30% of relapsing PANDAS traces to a carrier at home.
Yasko / Nebula genetics	Saliva kit, mail-in	Full methylation/detox SNP read (23andMe-type chips drop half the panel). Yasko's interpretation is free with her hair test.

INSURANCE NOTES

Primary codes for the requisition: **D89.89** (immune mechanism disorder — carries the panel), **F42.9** (OCD), **R32** (incontinence with normal urology), **R25.1** / **F95.9** (tics), **R76.8** (abnormal immunological finding — the anti-D1 antibody), **R63.0** (anorexia/appetite loss), **T78.40** (allergy), **Z87.19** (history of infectious disease). Most of Panels A–E are covered at LabCorp/Quest with these codes. IGeneX, mycotoxins, OAT, HPL and Yasko are cash (IGeneX ~\$400–700 for the three; mycotoxin ~\$300; OAT ~\$300; HPL ~\$80; Yasko hair \$125). If coverage is denied for any single test, do NOT drop it from the draw — have the lab hold the tube and run it self-pay; a restick is not an option for this child.