A real Plan B Case Review. Every name, place, date and identifying detail has been changed.

Ivy

FULL PLAN · 7 MAY 2026 · AGE 7 · PREPARED FOR HER MOTHER AFTER THE CASE REVIEW CALL

READ THIS BEFORE ANYTHING ELSE

I am not a doctor and this is not a prescription. I am a parent who has walked this road and spent a long time inside Ivy's records. Everything below is reasoning laid out so that you — and whichever clinician you take it to — can check it. Nothing here replaces her doctor, and anything involving a prescription medicine has to come from someone licensed to write it.

And I can be wrong. I read what was uploaded, and I can only see what was uploaded. If a number in here does not match the copy of the lab on your kitchen table, *the lab is right and I am wrong* — tell me and I will fix it the same day. Two things on this call were already like that: you told me her vitamin D is low and that you have started giving it, and you mentioned low iron. Neither result is in anything I hold. **That is not a small thing, and it is exactly the kind of gap I need you to close for me.**

Please read the next box with your lab folder open, and correct me on any line of it.

What I am working from — and what I do not have

SOURCE	WHAT IT GAVE ME
Panels I have read myself `the only things I quote numbers from`	Tick-borne serology **27 Apr 2026** and **15 Apr 2026**; the GI-MAP; mycotoxins; hair elements **Jun 2025**; CBC and chemistry **14 Apr 2026**; the Jun 2024 stool panel used for the before/after columns. Every value in this document carries its date for exactly this reason.
You told me on the call, and I have not seen it `unverified — please send`	**Vitamin D, "low, very low numbers"** — and that you have already started supplementing. **"Low iron"** as a result, separate from the ferritin I can see. The **label on your magnesium blend**. The **liver-detox liquid** you are taking. Until I see these, I am treating them as real but unquantified — I will not build a dose on a number I have not read.
Ordered and never drawn	**Serum zinc and serum copper** — both on the last order, both lost when the draw was cut short. They are back on the list below, which is why section 10 is about making the draw work.
Never tested, anywhere	Serum iron, TIBC and transferrin saturation. Strep DNase B. A serum vitamin D I can read. Full immune panel.

If you can send me the vitamin D and iron results this week, do that before anything else on this list. Low vitamin D and low iron both change what I would say about her immune picture, and one of them is already being treated without my having seen the number.

READ FIRST — and what I do not have
THE ORDER — gut, mold, Bartonella
1 · What has already gotten better
2 · The Lyme question, settled
3 · Bartonella — the real tick question
4 · What is actually wrong now
5 · The celiac window — time-sensitive
6 · The whole treatment, in phases
7 · Exactly what to buy
8 · The air, and the box fan
9 · The ochratoxin is probably food
9b · Who to get to inspect the house
10 · Making the next blood draw work
11 · The next labs, one stick
12 · What not to do
— One for her mother's own draw
— The tracker, and what happens next

The order, before anything else: gut, then mold, then Bartonella.

1 · GUT first — weeks 1–4. The *E. coli* is the active infection and the credible cause of the open barrier, the thin mucosal defense and the falling iron. Treat it, then rebuild. The celiac blood draw happens here too, because it is the one thing with an expiry date.
2 · MOLD second — weeks 2–8, overlapping. Find the ochratoxin source: *food first, house second*. This runs alongside the gut work because removing an exposure is not a treatment competing for her tolerance. And it must come before the tick work for a specific reason: **mold suppresses the immune system, so she has no ammunition to clear an infection until the load drops.**
3 · BARTONELLA last — and only after both. Confirm it properly first, then **low and slow**: three drops, up by one drop every four days, one thing at a time.

Treating in any other order is how children get worse on treatment that should have helped.

1 · What has already gotten better

Four worries can close, and that matters more than it sounds.

Her gut inflammation has resolved. Calprotectin was 178.5 against a ceiling of 50 in June 2024 — three and a half times over. On the March 2026 panel *every* inflammatory marker is inside range.
Her heavy metals are clean. Lead 0.19, mercury <0.1, arsenic 2.35, aluminum 7.38 — all well below their 75th percentiles. Barium 2.43 sits inside the reference ceiling of 5.59.
Strep is negative, twice. Anti-Streptolysin O <25.0 on 14 Apr 2026, <20 on 2 Jul 2025, DNase B <95. Answered — no need to repeat it.
And one of her two mycotoxins cleared completely. Gliotoxin went 1,048 → undetectable. **Her body can clear things.** That is the single most useful fact on this page.

2 · The Lyme question, settled

Two tick-borne panels, twelve days apart. The one value that pointed to Lyme **collapsed between them.**

TEST	15 APR 2026	27 APR 2026	REFERENCE
C6 peptide	**1.64 — reactive**	**0.51 — negative**	Negative <0.9
Lyme IgG/IgM screening ELISA	0.6 — negative	0.537 — negative	Negative <0.79
Western blot IgG — CDC criteria	Negative	Negative	5 of 10 bands required
Western blot IgG — alternate	Equivocal (41, 31, 30)	Equivocal (41, 31)	one fewer band
Western blot IgM	No bands at all	No bands at all	2+ bands required
PCR — 21 targets per panel	All Not Detected	All Not Detected	`Borrelia ×9, Bartonella ×5, Babesia ×2, Rickettsia ×4`

WHY THE DROP SETTLES IT

Borrelia IgG antibodies do not fall from 1.64 to 0.51 in twelve days. They persist for months to years — they famously stay positive long after successful treatment. An explanation that requires antibodies to vanish inside two weeks is not how immunoglobulin works. A number that disappears that fast was never antibody; it was assay variation.

"Why would it be positive in the first place?" has an answer. The C6 ELISA has a known false-positive rate, and Ivy has two conditions that produce exactly that kind of non-specific reactivity: a Bartonella exposure and an active *E. coli* infection.

On the bands: CDC IgG criteria need 5 of 10, so two is not a near miss. And of the two she has, **41 kD is flagellin** — the least specific band on the test, cross-reacting with other spirochetes and with ordinary mouth and gut bacteria; nearly everyone shows some. **31 kD is OspA**, which is not part of the CDC IgG set at all. She has *none* of the specific bands — no 23/OspC, no 39, no 93.

And she has no tick exposure history. Her mother is clear: Ivy has never been bitten by a tick. Congenital transmission from her mother is not a sound premise either — and it would not explain a value that vanished in twelve days.

3 · Bartonella — the real tick question

The same panels handed over something better, and it fits.

TEST	15 APR	27 APR	REFERENCE
Bartonella henselae IgG	0.557	**0.861 — equivocal**	Negative <0.837

It rose 55% in twelve days and crossed into equivocal — **the only value on either panel trending upward.** And unlike Lyme, there is an exposure history: **a kitten at a relative's house scratched her.** Cats are the reservoir for *Bartonella henselae*; cat-scratch disease is its common name.

The symptom picture fits too — the new eye tic, the facial grimacing, the outbursts, the fear of being alone, the fear of closed doors, the night wakings. Bartonella serology is also known to be insensitive, which is why a *rising* titer carries more weight than any single number.

What to do with it: confirm it properly before treating — a Bartonella ImmunoBlot IgG/IgM through **IGeneX or TLab**, not a standard lab and not Galaxy. If cost is the barrier, that is an honest conversation to have with her doctor; it does not need to happen this month, and the gut work comes first regardless.

4 · What is actually wrong now

FINDING	VALUE	REFERENCE	WHAT IT MEANS
Enteroaggregative *E. coli* (EAEC)	**1.4e4** was <1e2 in Jun 2024	≤6.5e2	**About 21× over, and new since 2024.** Her doctor is right that it needs treating. It causes persistent diarrhea and abdominal pain, and it is a credible driver of the open barrier, the low mucosal defense and the falling iron. **This is the lead domino.**
Pancreatic elastase 1	148.6 was 134.3	≥200	Low on two panels 21 months apart, so persistent rather than a blip — she is under-producing the enzyme that breaks food down. **But her fat absorption is normal** (fecal fat 29.2, ref 2.9–37.5), so prescription pancrelipase is probably not needed — a question to confirm with her doctor.
Fecal zonulin	221.5 was 210.7	25.1–160.8	Barrier still open, marginally worse than 2024.
sIgA	290.0 was 298.1	426–1450	Mucosal defense still thin. This is why the overgrowth gets treated *after* digestion, and why no binder goes in yet.
Commensal imbalance	*Akkermansia muciniphila*, *Bifidobacterium*, *Lactobacillus*		Named by the lab. Her Metabolic Health score worsened from 2.1 to **4.5**, crossing into the risk band, driven by these.
Tartaric acid	6.12	≤4.47	Yeast marker, high.
Phenyllactic acid	0.37	≤0.21	Bacterial marker, high. With calprotectin now normal, her gut problem is **dysbiosis, not inflammation** — a different target.
HVA / VMA ratio	**2.53**	0.74–1.88	HVA is the dopamine breakdown product, VMA noradrenaline's. High means dopamine running high relative to noradrenaline — **the pattern that tracks with tics, OCD features and explosive outbursts.** It explains what changed in this flare. It is an explanation, not a target: you fix what is pushing it, you do not chase the ratio in a seven-year-old.
Suberic acid	4.47	0.15–2.18	Twice over — a fatty-acid-oxidation marker, often high when carnitine is short. Worth a mention to her doctor, not urgent.
Ochratoxin A	**32.08** 20.84 → 33.87 → 32.08	<7.5	**Four times the cut-off and flat across twenty months** and more than one house. See section 9 — this is probably dietary.
Ferritin	14 was 33	12–73	Inside range but **halved in ten months**, with hemoglobin normal at 12.8 — iron-depleted, not anemic. Her iron stores sitting near the floor is where restless legs and broken sleep live, and night waking is one of her new symptoms.
Deamidated gliadin peptide	**11.5**	≤10.0	Mildly elevated — an **early celiac** marker, and more specific than a general food-sensitivity panel. See section 5.
Butyrate producers	*Faecalibacterium prausnitzii* >30 · *Roseburia* >30		**Abundant — good news.** Do not buy butyrate supplements; she makes plenty.

5 · The celiac window — this is the time-sensitive one

> ### Celiac blood tests only work while she is still eating gluten.
>
> Her DGP is already elevated at 11.5, which means her immune system is reacting *now*. Serology can fall negative within weeks of going gluten-free, so every week of cutting further is a week of losing the answer.

So: keep her on roughly 1–2 slices of bread a day — about 3–6 g of gluten, the minimum the literature uses — until **tTG-IgA and total IgA** are drawn. Her total IgA is 101 and normal, so the tTG will be interpretable.

And the worry about gluten inflaming her gut is answered by her own number: calprotectin was 178.5 and is now normal — and that improvement happened *while she was eating gluten*. The gluten is not currently driving measurable gut inflammation.

The alternative is far worse. If she goes fully gluten-free and needs an answer later, that means a formal gluten challenge: ESPGHAN's practice figure is 10–15 g/day for **three months**; the newer guidance is 3–6 g/day for **12 weeks or longer**. And even then ESPGHAN's own pediatric data showed only **66% converted at three months**, 89.9% at six. That is three to six months of deliberately feeding gluten to a child who may have celiac disease — entirely avoidable by drawing blood in the next two weeks.

6 · The whole treatment, in phases

Everything she is doing or will do, in the order it should happen. **One new thing at a time, four days apart** — that spacing is the only way to know what helped and what did not. Nothing in a later phase starts before the one before it is settled.

PHASE 0 — THIS WEEK, BEFORE ANY TREATMENT

DO	WHY NOW
Keep her on 1–2 slices of bread a day until the blood is drawn	The celiac test only works while she is eating gluten, and her DGP of 11.5 says her immune system is reacting *now*. This is the one thing with an expiry date.
Book the home blood draw (mobile phlebotomy, section 10)	Within two weeks. tTG-IgA is first on the list if only one tube comes out.
Electrolyte water, 3 days before the draw	Dehydration is the commonest cause of a failed pediatric stick and is very likely what happened on 27 Apr.
Start the tracker tonight	Before anything changes. Five or six interventions are coming in sequence — without a baseline now, every improvement afterwards is guesswork.
Confirm which antibiotic her doctor prescribed	And tell the doctor Ivy had **30 days of azithromycin in Jul 2024**. EAEC commonly resists several agents, and a second macrolide course is a different decision than a first.
Order the supplements (section 7) but *start nothing yet*	So nothing is waiting on shipping when its phase arrives.
Start polyphenol foods now — pomegranate, berries, dark grapes	It is food, not a treatment. No reason to wait and nothing to confound.
Begin the food audit for ochratoxin (section 9)	Free, and it is the likelier source. Grains, coffee, cocoa, raisins, grape juice, paprika, chili, peanuts.
Build the box fan (section 8)	~$60–100, bedroom, 24/7. Independent of everything else.
Walk the house with the moisture meter she already bought	Baseboards, under sinks, around toilets, window sills, anywhere water runs. An infrared thermometer finds cold damp spots. Costs an evening.

PHASE 1 — THE GUT · WEEKS 1–4

The *E. coli* at 21× is the active infection and the credible cause of the open barrier, the thin mucosal defense and the falling iron. Treat it, then rebuild in order.

WHEN	WHAT	NOTES
Days 1–5	**The antibiotic her doctor prescribed for the E. coli, exactly as prescribed**	Nothing new from this list alongside it. This is the lead domino — the whole sequence depends on it.
Day 6	**Probiotic A** — the *B. infantis* / *B. lactis* powder	Her panel named these strains. Watch four days.
Day 10	**Probiotic B** — the *Lactobacillus* chewable	Watch four days.
After the antibiotic finishes	**Iron — bisglycinate, with vitamin C**	**Deliberately after, not during.** Evidence on oral iron and gut pathogens is mixed, but the agreed mechanism is unabsorbed iron reaching the colon — and the one trial that found raised Enterobacteriaceae used bisglycinate. A five-day delay sidesteps the question entirely. Give away from dairy and calcium-fortified milk.
Weeks 2–3	**Pancreatic enzymes with meals**	Elastase 148.6 on two panels 21 months apart. Not DAO. Her fat absorption is normal, so an over-the-counter plant-based chewable is likely enough — ask her doctor whether prescription pancrelipase is needed at all.
As needed, throughout	**Magnesium citrate**, titrated to a soft daily stool	Not ox bile — see section 7. **Get RBC magnesium measured first** for repletion dosing; using it as a stool softener is self-limiting and can start sooner.
After the draw	**Reduce gluten**, and protect her fiber as it goes	Carrots, bell peppers, broccoli, leafy greens, legumes, spinach, garlic, onions, cabbage. Going gluten-free starves the two organisms she is short of if fiber is not replaced deliberately.
Watch for	Tummy aches easing — those were probably the E. coli. Stool form daily. Any worsening of tics or outbursts within three weeks of a change means **stop that change**.	

PHASE 2 — THE MOLD · WEEKS 2–8, OVERLAPPING PHASE 1

Removing an exposure is not a treatment competing for her tolerance, so it runs alongside. But it must come before the tick work for a specific reason: **mold suppresses the immune system, so she has no ammunition to clear an infection until the load drops.**

WHEN	WHAT	NOTES
Weeks 1–3	**Food audit**, then **house walk-through**	Food first — the ochratoxin has stayed flat across more than one house, so the building is the less likely source.
Weeks 2–4	**Independent mold assessor** if the food audit does not explain it	Section 9b. Check their credentials and reviews, and choose one that is **not** a company that also does the repair work. Ask specifically for dust/ERMI, not air only.
Throughout	**Box fan running in her bedroom**	MERV-13, filters dated and changed every 3–6 months.
ASK FIRST	**The cholestyramine her doctor already prescribed**	**A question for her prescriber: should it wait?** It is a strong binder, and these are the three conditions worth raising before it starts: (1) she is *out* of the exposure — otherwise you are bailing a boat without plugging the hole; (2) she is passing **TWO full soft stools a day** — big ones, not pebbles, not "she went a bit". This is not a nicety: a binder grabs the toxins and then they have to *leave*. A constipated child on a binder reabsorbs what was just mobilized, and you are worse off than before you started. **Ask whether the bowel should be built up first, with magnesium increased the moment the binder goes in;** (3) sIgA and zonulin are improving. And ask her prescriber whether to begin **low and slow** rather than at a loading dose. Good to have on hand; the timing is the prescriber's decision.
After the source changes	**Repeat urinary mycotoxins** `RealTime Laboratories`	Only after something about the exposure is different — otherwise it reads the same for a fourth time.

PHASE 3 — BARTONELLA · WEEK 8 ONWARD, AND ONLY AFTER 1 AND 2

STEP	WHAT	NOTES
1	**Confirm it first** — Bartonella ImmunoBlot IgG/IgM	IGeneX or TLab, **not** Galaxy. Her *B. henselae* IgG rose 0.557 → 0.861 into equivocal in twelve days, and there is a cat-scratch exposure history. If the cost is prohibitive, that is an honest conversation with her doctor — but do not treat on an equivocal alone if it can be confirmed.
2	**LOW AND SLOW. Three drops to start.**	Increase by **one single drop every four days**, one agent at a time, building toward the loading dose over weeks. **Never start at the loading dose.** A 30-drop start in a child with a depleted system is how a treatment that should help makes her much worse.
3	**Watch the tracker daily**	The first sign of worsening is the signal to hold at that dose, not to push through.
—	**Lyme treatment — ask whether it is indicated**	Section 2. The C6 went 1.64 → 0.51 untreated — worth putting that to her doctor before any Lyme course.

PHASE 4 — WHAT THE LAB RESULTS OPEN UP

IF	THEN
IgG subclass or pneumococcal serotype deficiency	That is the door, and it reframes everything: it explains the repeated infections without needing a new organism, and it is the conversation that leads to **immune-directed treatment including IVIG** rather than another antibiotic course. This is the highest-value unknown she has.
tTG-IgA positive	Celiac confirmed — strict gluten-free for life, with a pediatric GI and a dietitian. The DGP of 11.5 makes this a real possibility, and it is why the draw cannot wait.
tTG-IgA negative	Then the gluten reaction is secondary to the leaky gut, as her doctor suspects — and it should improve as the barrier closes, rather than needing lifelong restriction.
Mycoplasma IgG positive	Past or chronic exposure confirmed. Relevant given she visibly responded to treatment for it before.
RBC magnesium low	Replete properly rather than only using citrate as a stool softener.
Serum zinc low	Treat it — zinc deficiency makes a leaky gut leakier, so it is part of the mechanism rather than a side issue.
Ferritin still falling at 8–12 weeks	Look for a cause rather than increasing the dose: celiac disease, ongoing malabsorption, or occult loss.

ON HOLD, DELIBERATELY

ITEM	STATUS
BPC-157 peptide (recommended by her doctor)	**Ask her doctor whether it can wait.** It is a gut-repair peptide and she has more direct things to fix first. Peptides also commonly work well for a month or two and then stop. Adding it while five other variables are moving would make it unreadable. Revisit if the barrier markers have not improved after Phases 1 and 2.
Cholestyramine	**Ask her prescriber** about timing against the three conditions in Phase 2.
Any Lyme treatment	**Not supported by her labs** — a question for her doctor, with section 2 in hand.
Butyrate, Akkermansia supplements, DAO, ox bile	**Not needed** — see section 12 for why each one.

7 · Exactly what to buy

Products named as examples of the right strain, form and category — substitutes with the same strains are fine. Doses are her clinician's call; label amounts given so you know what you are looking at.

WHAT	PRODUCT	FORM & LABEL	WHY THIS ONE
Probiotic A `day 6`	**Jarrow Baby's Jarro-Dophilus** `or Seeking Health ProBiota Infant`	Powder, ~3 billion CFU	Contains *B. infantis* and *B. lactis* — the two strains her own report named. **Powder is ideal for texture aversion** — dissolve it fully into the smoothie or juice and there is nothing to notice. Stir into something *cold*, never hot; heat kills the organisms.
Probiotic B `day 10`	**Klaire Labs Ther-Biotic Children's Chewable**	Chewable, ~25 billion CFU	*L. acidophilus, L. rhamnosus, L. plantarum* plus bifido. Hypoallergenic and dairy-free — **but a chewable tablet is a texture risk for her.** If she refuses it, **crush it into the smoothie**, or use the Pure Encapsulations capsule below and empty that in instead.
alternative	**Pure Encapsulations Probiotic-5**	Capsule, openable	Dairy and soy free. Open into food if chewables are a fight.
Enzyme `week 3`	**Klaire Labs Vital-Zymes Chewable**	Chewable, one per meal	Broad protease/lipase/amylase blend formulated for children. Her fat absorption is normal, so a plant-based enzyme is likely the right level — whether she needs prescription pancrelipase is her doctor's call. **Texture note:** enzymes taste sour and bitter, so hiding them in bland food usually fails. Open the capsule into *strongly flavored* first bites, or try the chewable and see. **If both are refused this is the one item to postpone** — her fat absorption is normal, so it is the least urgent thing on the list.
alternative	**Pure Encapsulations Digestive Enzymes Ultra**	Capsule, openable	Sprinkle on the first bites.
Iron `after the draw`	**Pure Encapsulations Iron-C**	15 mg iron bisglycinate + vitamin C	**Bisglycinate, not ferrous sulfate** — gentler on a gut whose barrier is open, and better absorbed. Vitamin C is built in, which can double or triple absorption. **Give away from dairy and calcium-fortified milk** — calcium blocks iron directly.
alternative	**NovaFerrum liquid**	Liquid	**Probably the better choice for her.** Liquid beats capsule for texture. Iron liquids taste metallic, so give it in a small glass of orange juice — which also supplies the vitamin C.

EVERYTHING BELOW HAS TO GET PAST HER TEXTURE ISSUES — READ THIS FIRST

The smoothie is the answer, and it solves five problems at once.

Ivy has texture issues, which rules out most of the obvious forms: **pomegranate seeds** (crunchy arils and membrane), **whole berries** (skins and pips), **chewable tablets**, and anything gritty. A plan she refuses is not a plan.

Blending destroys texture entirely. One cup each morning can carry blended berries (polyphenols *and* fiber, with no skin or seed texture), a shot of pomegranate juice, the probiotic powder dissolved invisibly, and protein — which matters, because her BUN of 7 and creatinine of 0.49 both sit below range with a normal albumin, and that usually means low protein intake.

The order of what she will accept, generally: smooth liquid → fully-dissolved powder → blended → swallowed capsule → chewable → gritty powder. Work down that list, not up it. And a **frozen pomegranate or berry ice pop** is often accepted when the same thing in a cup is not — cold mutes texture and flavor both.

POLYPHENOLS — FOOD, NOT A SUPPLEMENT (TEXTURE-ADAPTED)

Akkermansia muciniphila is the organism that maintains the gut's mucus barrier — precisely what is failing in her. **You cannot usefully supplement it; you feed it.** So an Akkermansia capsule, if you have one, can stay in the cupboard.

- **Pomegranate JUICE, not seeds** — a shot glass of unsweetened 100% juice daily (POM Wonderful). Smooth, no texture. Skip the arils for her.
- **Berries blended, not whole** — frozen blueberries, raspberries, blackberries into the smoothie. Frozen blends smoother and costs less. If any seed grit survives, strain once through a sieve and she will not know.
- **Freeze-dried berry powder** is the backup if even blended is refused — stirs into anything, no texture at all.
- **Ice pops** — pomegranate or blended berry frozen in a mold. Often accepted when the same thing in a cup is not.
- **Skip dried cranberries and whole grapes** for her — both are texture problems. And skip green tea: caffeine, and she already has sleep trouble.

VITAMIN C WITH THE IRON — EVERY SINGLE DOSE

Never give the iron without vitamin C at the same time.

Ivy's iron is all non-heme, and vitamin C converts it to the form the gut actually absorbs — it can **double or triple** how much gets in from the same dose. This is the cheapest multiplier in the whole plan and it is routinely left out.

How: the Pure Encapsulations Iron-C has it built in. If you use the liquid instead, give it in a small glass of **orange juice**, or alongside the vitamin C she is already taking. Either way, together — not hours apart.

AND GET IRON IN THROUGH FOOD — THIS IS HALF THE JOB

A supplement on its own, in a child who eats a narrow diet, is swimming upstream. Four things, all of which fit what she already eats:

DO THIS	WHY IT WORKS
Cook in a cast-iron pan	Food cooked in cast iron picks up real, measurable iron — and the more acidic and the wetter the food, the more it picks up. **Tomato sauce simmered in cast iron is the single best vehicle you have**, because the acid pulls iron out of the pan and the tomatoes' own vitamin C helps her absorb it. No taste change, no new food to negotiate.
Blackstrap molasses into the tomato sauce	One of the most iron-dense foods there is, and a tablespoon disappears into a red sauce — it reads as sweetness, not as a supplement. It also goes into a smoothie. Pair it with the sauce's own vitamin C and you have the absorption multiplier built in.
Keep the ground beef in the tacos	You said she has it once or twice a week. That is *heme* iron — absorbed several times better than any plant source or supplement, and it also increases absorption of the non-heme iron in the same meal. It is already an accepted food. **Protect it; do not change it.** If anything, make it twice a week rather than once.
Vitamin C at the same meal	Orange or strawberries with the meal, or lemon in her water. Same mechanism as the supplement — it converts the iron into the form the gut can take up.

On the texture issues — do not fight them head on. She has a short list of accepted foods and a narrowing diet, and pushing a new food directly usually costs you the meal and the trust. The method that works is **food chaining**: bridge from a food she already accepts to a near neighbor that differs in only *one* way — one change at a time in texture, or flavor, or shape, never several at once — and serve a teaspoon of the new thing beside a full portion of the old one, with no pressure to eat it. It can take ten to twenty exposures. That is normal and it is not failure.

Ask Minta for a food-chaining map for Ivy specifically. Tell it what she will eat today — beef tacos, and the rest of the short list — and it will build the bridges from there, in order, one link at a time. It is better at this than a generic list because it starts from her actual accepted foods rather than from what a seven-year-old is supposed to eat.

And keep it away from calcium. Dairy, and any calcium-fortified milk, block iron absorption directly. Not with breakfast milk; not with a yogurt smoothie. **If her probiotic smoothie contains dairy or fortified plant milk, the iron goes at a different time of day.**

FOR THE CONSTIPATION — AND GET THIS WORKING BEFORE ANY BINDER

Magnesium citrate, not ox bile. Ox bile's actual job is fixing fat malabsorption, and **her fat absorption is normal** (fecal fat 29.2, ref 2.9–37.5; triglycerides 1.7; long-chain fatty acids 16.5 — all in range). So its indication is absent.

Her bile acids *are* abnormal, but not in a way ox bile fixes: **deoxycholic acid 22.76%** (ref 24.25–75.84, low) with lithocholic 62.97% high-normal, and her *primary* bile acids not elevated. DCA and LCA are *secondary* bile acids — made by gut bacteria converting the primary ones. That is a **bacterial conversion problem, not a bile-supply problem**, which is what the panel's "altered bile acid metabolism" flag is detecting. **The fix for her bile acids is the probiotics and clearing the E. coli** — adding bile would feed raw material into a broken conversion step, and bile acids irritate an already-leaky colon.

Supporting the magnesium choice: **hair calcium 630** against a reference of 140–500, with a Ca/Mg ratio of 20.3 in the upper half of range. Relative magnesium insufficiency against high calcium is plausible.

- **Start it before the binder, not after.** Get her to a reliably soft daily stool first, then add a binder on top of a working bowel. Chasing binder constipation afterwards is a miserable few days.
- **Titrate to the stool, not to a dose.** Start low, increase until stools are soft daily, back off if loose. The right dose is whatever does that for her.
- **She is already on vitamin C**, which is itself mildly osmotic at higher doses — so the magnesium dose she needs may be smaller than expected.
- **But get RBC magnesium measured first** (see section 11). It has never been done, and it can come back high, which would change the answer entirely. Her mother found magnesium helped her own exhaustion, which is one more reason to measure Ivy's instead of guessing.

PROTECT HER FIBER AS THE GLUTEN COMES OUT

Going gluten-free usually drops fermentable fiber hard — and fiber is what *Bifidobacterium* and *Akkermansia* eat. Cutting gluten carelessly starves the two organisms she is already short of. Deliberate sources, from her own report: carrots, bell peppers, broccoli, leafy greens, legumes, spinach, garlic, onions, cabbage.

8 · The air, and the box fan

On the plug-in air purifiers she already has: these units work by ionization / photocatalytic oxidation — they act on microbes in air and on surfaces. **They are not particle filters.** They do not pull mold spores out of the air the way filtration does, and ionizing devices can generate ozone or oxidation by-products, which is not something to run continuously beside a seven-year-old's bed. Keep it as an extra, on the lowest setting in occupied rooms.

The thing worth building is a Corsi-Rosenthal box — about $60–100, and it moves several times more filtered air than a small consumer HEPA unit. **MERV-13 captures mold spores** (roughly 1–20 microns), which is the job.

BUY	SPEC	NOTES
One 20″ box fan	Lasko 3723 or any standard 20″	~$25. A newer fan with a fused plug is the safer choice.
Four filters	**20×20×2″, MERV-13**	2″ deep rather than 1″: more surface, less resistance, quieter, lasts longer. MERV-13 is the grade that catches spores — MERV-8 does not.
Duct tape + cardboard	One roll; the fan's own box	The shroud is not optional.

- Build a **cube**: four filters as the walls, fan on top blowing **upward and out**, cardboard sealing the bottom.
- **All filter arrows point inward**, toward the middle. Air is pulled in through the filters and pushed out by the fan.
- Tape every seam — any gap lets unfiltered air short-circuit through.
- **Add the cardboard shroud** over the fan face, cut to expose only the blades. This one step raises airflow by roughly 20–50%, and it is the step everyone skips.
- **Build more than one.** Her bedroom first, then the main living room and the kitchen. At $60–100 each that is still less than one decent consumer HEPA unit, and it covers the rooms she actually occupies.

- **Run them medium, 24/7.** They are loud. Run them anyway. Replace filters every 3–6 months — write the date on the side in marker.
- **And stop relying on the plug-in purifiers as the main defense** — move them to the lowest setting, or out of her bedroom entirely. They are not filters, and an ionizer running beside a child's bed all night is not what you want doing the work.

9 · The ochratoxin is probably food, not the house

Gliotoxin went **1,048 → undetectable** when the environment changed. Ochratoxin A has not budged: **20.84 → 33.87 → 32.08** across three panels, twenty months, more than one address, and a clean air test in the current home. **If it were the building, moving would have changed it.** It didn't — because ochratoxin A is principally a *dietary* mycotoxin, produced on stored crops.

Where to look instead — audit her week:

- **Cereals and grains** — the largest dietary contributor by far
- **Coffee and cocoa/chocolate**
- **Dried vine fruit** — raisins, sultanas
- **Grape juice**
- **Spices** — especially paprika and chili
- **Peanuts**

Grains being the top source is worth noting but **not a reason to stop the bread before the celiac test** — two weeks will not move a twenty-month number. It does mean that once the tTG is drawn, a gluten-free shift may drop the ochratoxin on its own, which would confirm the source for free.

9b · Who to get to inspect the house

Ask any inspector for their credentials, and check their reviews. A named credential you can look up is a better filter than a star rating alone.

And the company that tests should not be the one that fixes it. So hire an *independent assessor* — not a remediation company offering a free inspection, because their incentive is to find something.

FIRM	REVIEWS	NOTES
Firm A — inspection & engineering	**4.9 from 270+**	Serves her town, in business for over fifteen years, lists mold and toxic material testing. The strongest profile by a wide margin — both volume and rating. Start here.
Firm B — home inspections	—	The credential-forward option: publishes its credentials and states a mold-assessment specialist on staff. Serves her town.
Firm C — regional mold-inspection group	1,600+ across the group; 4.0 from 4 locally	Covers her town and the nearest city. Large group, thin local sample.
Firm D — environmental	5.0 from 7	Small sample; a reviewer specifically praised the sample collection.
Firm E — environmental	5.0 from 14	Small sample.

FOUR QUESTIONS TO ASK EACH ONE

1. What are your **mold-assessment credentials**? `Then check them, and read the reviews.`
2. **Do you also do remediation?** If yes, hire someone else.
3. Do you do **dust sampling / ERMI**, or air only?
4. Will you inspect **inside wall cavities and under flooring**, or only what is visible?

Why question 3 matters: the clean air test means less than it sounds. Air sampling is the least sensitive method — spores are not airborne unless something disturbs them. Dust-based testing (ERMI) and direct sampling of suspect areas find what air tests miss. None of the firms above advertised ERMI, so it has to be asked for directly.

But keep the priority straight. Her ochratoxin has stayed flat across more than one house. If it were the building, moving would have changed it. So the inspection is worth doing — and **the food audit comes first, because it is free and it is the likelier source.**

10 · Making the next blood draw work

The last draw was traumatic and only yielded one tube — which is why the celiac question is still unanswered. These are the things that decide whether a hard stick succeeds, and most get skipped.

1. **Hydrate her hard for three days beforehand** — water with electrolytes. Dehydration is the commonest cause of a failed pediatric draw and is very likely what happened last time.
2. **Warm the arm** with a heating pad for ten minutes before. Real difference in small veins.
3. **Lidocaine/numbing cream**, applied with enough lead time to actually work.
4. **Ask for a butterfly needle** and pediatric/microtainer tubes. Many labs can run on far smaller volumes if asked *in advance* — nobody offers unprompted.
5. **Not the same site as last time.** The last site was still bruised days later. Say so before anyone touches her.
6. **Nobody rushes.** There is an appointment; there is no emergency. If it is not flowing, stop — as her mother rightly did.
7. **At home is likely better** — no waiting room, her own sofa, a parent's lap.

MOBILE PEDIATRIC PHLEBOTOMY NEAR HER

- **Service A** — in the nearest city; reviews mention drawing a 14-month-old at home
- **Service B** — lists her area for at-home pediatric draws
- **Service C** — advertises gentle child collection at home

Ask each one directly: *how often do you draw anxious seven-year-olds, do you use butterfly needles, and can you run microtainer volumes?* Also ask her own doctor whether the hydroxyzine she prescribed, which appeared to help last time, makes sense again.

11 · The next labs — one stick, in priority order

TUBE COUNT: 3 tubes — one gold/SST (serology, ferritin, vitamin D), one LAVENDER EDTA (CBC and RBC magnesium — one tube does both), one ROYAL-BLUE trace element (zinc + copper). Plus send-outs: a stool kit and, later, the Bartonella immunoblot.

Listed in the order they should be drawn, so if only one tube comes out it is the right one. Numbered 1–8 — work down the list and stop wherever the draw stops.

#	TEST	CPT	ICD-10	WHY IT IS IN THIS POSITION
1	**tTG-IgA + total IgA**	83516 · 82784	K90.0	**The only test with an expiry date.** It stops working once she is off gluten. Everything else can wait; this cannot.
2	**IgG subclasses 1–4 + pneumococcal serotype titers + IgM**	82787 · 86317 · 82784	D89.89 · D80.3	Her total IgA (101) and IgG (914) are normal and **no subclass or serotype has ever been looked at.** Normal totals with non-protective serotypes is a pattern that gets dismissed on the normals — and it is what decides whether she is an IVIG candidate.
3	**Full iron panel** — ferritin, **serum iron, TIBC, transferrin saturation** + CBC	82728 · 83540 · 83550 · 85025	E61.1	Ferritin alone is not the iron picture, and **serum iron, TIBC and saturation are not in the records I hold** — though you mentioned "low iron" on the call, so if there is a serum iron result somewhere, please send it. Worth knowing: her red cells are currently *unaffected* — MCV 87.4 (ref 77–90), RDW 11.6 at the low end of 11.0–14.5, hemoglobin 12.8. In developing iron deficiency RDW rises first; hers is uniform. So this is depleted stores without functional impact yet — real, treatable, not urgent.
4	**RBC magnesium** `RBC, not serum`	83735	E61.2	**Never measured, and several things point at it.** Hair calcium **630** against a reference of 140–500 with a Ca/Mg ratio of 20.3 — high calcium against relatively less magnesium. Her gut is the stronger argument: magnesium is absorbed in the small intestine, and that absorption falls with inflammation and dysbiosis. She is already visibly under-absorbing — ferritin halved, BUN 7 and creatinine 0.49 both below range with a normal albumin. Her symptoms overlap too: constipation, night wakings, anxiety. And going gluten-free cuts magnesium intake, because whole grains are a major source. **It must be RBC, not serum.** Serum magnesium is tightly regulated and stays normal while tissue stores fall — it is the test that misses deficiency. **Rides free on the lavender EDTA tube already being drawn for the CBC.** **And do not start magnesium repletion before the result.** RBC magnesium can come back high as easily as low, and the answer decides the plan. `Whole blood, lavender EDTA, cells not discarded.`
5	Zinc, serum	84630	E60	**Never measured in blood.** The only zinc she has is hair, once, eleven months ago: **210 against a reference of 100–190** — high. That tells you very little on its own, and it can mislead in two opposite directions: high hair zinc sometimes reflects good status and sometimes reflects zinc being *dumped* rather than retained. A single hair value cannot distinguish them, and in practice a high hair zinc alongside a frankly low *serum* zinc is a common and well-recognized pairing. **It matters here because she has reasons to be depleted that hair will not show.** Zinc is absorbed in the small intestine, and that absorption falls with inflammation and dysbiosis — and she is already visibly under-absorbing (ferritin halved; BUN 7 and creatinine 0.49 both below range with a normal albumin). She also has an active *E. coli*, an open barrier and a narrowing diet. **And zinc is one of the few things that directly makes a leaky gut leakier** — it is required for mucosal repair and barrier integrity. With her zonulin at 221.5 and sIgA at 290, a low zinc would not be a side issue; it would be part of the mechanism. **And the collar-chewing is why this is near the top of the list.** You mentioned she is always chewing on her shirt collar. Repetitive mouthing behaviors — shirt and collar chewing, nail biting, chewing on objects — are worth screening zinc for. It is not universal, but it is common enough and cheap enough to check that it should not be guessed at. **Order copper alongside it** (CPT 82525): zinc and copper compete, the ratio is more informative than either alone, and both were ordered last time but never drawn because the draw failed. `Royal-blue trace-element tube only — a standard tube leaches zinc and gives a falsely high result, which would wrongly reassure.`
6	**Vitamin D, 25-OH**	82306	E55.9	**Not in the records I hold — but you said on the call that it is low and that you have already started giving it.** So it exists somewhere; please send me that result and I will fold it in. Worth rechecking at 8–12 weeks either way, because a child with gut malabsorption often needs more than the label dose to move the number, and the only way to know is to re-measure.

7	Mycoplasma pneumoniae **IgG**	86738	B96.0	Never run. Her IgM (445, ref <770) is in range — not active — but she visibly responded to treatment for it, and IgG reads past exposure.
8	Repeat stool panel	send-out kit	K52.9	No needle — can be done any time at home. Recheck the EAEC after treatment, plus elastase, zonulin and sIgA.

SPECIMEN HANDLING — HAND THIS TO WHOEVER DRAWS HER
• ZINC MUST GO INTO A ROYAL-BLUE TRACE-ELEMENT TUBE. A standard tube contaminates it and the result is meaningless.
• Draw the royal-blue tube with its own needle, or last in the order, so no additive carries over.
• Serology and ferritin in the gold/SST tube — spin and separate within two hours.
• CBC AND RBC MAGNESIUM BOTH COME OFF THE ONE LAVENDER EDTA TUBE. DO NOT DISCARD THE CELLS — the magnesium is measured inside the red cells, so a spun-off plasma sample cannot be used. Whole blood, refrigerated, cells intact.
• BUTTERFLY NEEDLE. Microtainer volumes if available. ONE stick. She is seven, and the last attempt was traumatic.

12 · WHAT NOT TO DO, AND WHY

- **Ask before any Lyme treatment.** See section 2. Is a long antibiotic course in a seven-year-old justified by one value that had already vanished? That is the question for her doctor.
- **Ask her prescriber whether the mold binder should wait.** sIgA 290, zonulin 221.5 — a binder mobilizes toxins into exactly that compartment. Source first.
- **Do not treat the overgrowth before the enzymes**, or the barrier before the overgrowth. That is working against the cause.
- **Do not repeat the strep antibodies.** Answered twice.
- **Do not chase a heavy-metal protocol.** Her metals are clean.
- **Do not buy butyrate** — she makes plenty. Or an **Akkermansia supplement** — feed it instead. Or **DAO** — it only breaks down histamine and does nothing for her enzyme shortfall.
- **Berberine** is suggested by the lab for the E. coli, but pediatric safety data is thin and she has a prescription available. Her doctor's call, not a self-start.
- **No Cunningham Panel. No MiraLAX or senna.**

One for her mother's own draw next week

Add RBC magnesium to your own labs. What you described is worth taking seriously: a dose of magnesium and you wake with real energy the next day; skip it and you sleep long and still wake exhausted. Plus long-standing constipation, and weeks of heavy daytime fatigue.

That is a textbook magnesium-responsive picture — fatigue, constipation, poor sleep quality, and a dramatic difference on repletion. The fact that one dose changes your next day that much is a signal, not a coincidence.

You have been looking for the cause of your own exhaustion in mycotoxins and Lyme — and the thing you have already found that works is magnesium. It costs nothing extra to check it on a draw that is already happening, and **it must be RBC magnesium, not serum**, for the same reason as Ivy's. If it comes back low, that is an immediate and cheap answer, and worth having before spending on the mold panels.

On the product — you described it on the call as a three-form blend: citrate + oxide + malate. Two things follow from that. The **citrate** is the one moving your bowel, and it is the form that would do the same job for Ivy if she ever needs it. The **oxide** is largely filler for this purpose — it is the poorest-absorbed common form of magnesium, which is why it is the one most likely to loosen stool without repleting much; so if your own level comes back low *while you are taking this*, that is not a contradiction, it is the oxide. Still send me a photo of the label and I will check the actual milligrams per form.
And do not give Ivy an adult dose from your own bottle — a 23-kg seven-year-old is a different number, and her result should come first.

FOR HER MOTHER — YOUR OWN DRAW: 1 tube — one LAVENDER EDTA. That is the whole order.

TEST	CPT	ICD-10	TUBE
Magnesium, RBC (erythrocyte) `NOT serum magnesium — serum is the test that misses this`	83735	E61.2 · R53.83	Lavender EDTA, whole blood, refrigerated, **cells not discarded**

SPECIMEN HANDLING — HAND THIS TO WHOEVER DRAWS YOU
• RBC / ERYTHROCYTE MAGNESIUM, NOT SERUM MAGNESIUM. If the requisition says "magnesium" without qualification, the lab will run serum and the result will come back normal whether or not you are deficient. Say it out loud at the window.
• Lavender EDTA tube, whole blood, kept cold, cells NOT spun off and discarded — the magnesium is being measured inside the red cells.
• If the draw site says they cannot run it, ask them to send it out. Most reference labs do.

And do not stop your magnesium blend before the draw unless someone tells you to — what you want to know is what your level is on the dose you are actually taking. If it is low *while* you are supplementing, that is the more useful answer, and given the oxide in that blend it is a real possibility.

And the one thing that makes all of this readable

Rate these every night, starting tonight, before anything changes: eye tic · facial grimacing · outbursts · fear of being alone · fear of closed doors · night wakings · school refusal · **chewing on her shirt collar** · stool form (loose / soft / formed / pebbles / hard) · **number of stools that day**.

The last two are not housekeeping. **Two big soft stools a day is the gate on starting the mold binder** — so the stool line is the thing that tells you when Phase 2 can begin, and it is the only part of this plan whose timing you control from the kitchen table rather than from a lab. And the collar-chewing is on the list because it is the symptom most likely to answer the zinc question before the blood test does: if it fades once zinc is corrected, that is your answer.

Five or six changes are about to happen in sequence over the next month. Without a baseline taken *now*, every improvement afterwards is guesswork. Two weeks of nightly ratings will show you which one moved her.

Two ways in, and the phone one is the one that sticks:

On the phone	`apps.apple.com/app/id6816483159` — search the App Store for **"Plan B for PANS"**. You said you could not find it; that link goes straight to it. Once it is installed you never sign in again — open it and tap.
Or in a browser	`planbforpans.com/tracker`

Her symptoms are already loaded — the list above is in there, nothing to type. You can add one, remove one, or mark one resolved whenever it changes, and you should: the list is meant to follow her, not to be a form she fails.

WHAT HAPPENS NEXT, AND WHEN

Now → week 4	Phase 1, the gut. Antibiotic, then rebuild, then iron. The **celiac draw while she is still eating gluten** — the one thing on this list with an expiry date. Tracker every night.
In one month	**Check back in with me.** By then we will know whether the *E. coli* treatment moved anything, whether the bowel is at two stools a day, and we will have the vitamin D and iron numbers I am missing. **That conversation decides when the mold phase starts** — not the calendar.
Then	Mold: binder, on a working bowel. And retesting **both of you** — Ivy's mycotoxins to see whether the ochratoxin finally moves once the food source is out, and yours, since you have been looking for the cause of your own exhaustion in the same place.

Built 7 May 2026 from Ivy's own records, every value checked against the reference range printed on its own report: the 17 Mar 2026 Vibrant panel (Gut Zoomer, Heavy Metals urine, Organic Acids), the 27 Apr and 15 Apr tick-borne panels, the 14 Apr chemistry, CBC and immunoglobulins, the 2 Mar 2026 mycotoxins, the 3 Apr kryptopyrrole, the 13 Jun 2025 hair elements, and the 16 Jun 2024 stool panel for comparison. Educational and for Ivy's own clinicians to act on — Plan B for PANS is not a prescriber, does not diagnose, and nothing here replaces her medical team.