

Gus Detailed Report

Gus is a forty-three year old yellow-naped amazon who was surrendered to Mickaboo on 6/24/19 because his family of 38 years was moving out of state and couldn't take him with them. He has had ongoing health issues and was first seen at Wildwood soon after intake. He has been seen at MCFB (February of 2020), an Animal Eye Care specialist (7/20/20) and by Dr. Tino Luehman (May 31, 2021). Inexplicably, his care was transferred to FTB on 4/10/24. His total costs at Mickaboo from entry to present are \$18,300. Care over five years at MCFB, Wildwood, Dr. Luehman and the Eye Care specialist amounts to a total of \$11,029. We estimate the total cost at Wildwood was \$9,500 over five years. The other \$7,500 was spent at FTB in the ten months between April and February 2025.

In February of 2020, Gus was seen at MCFB for lethargy, reduced appetite and activity levels and repeated falling. His droppings were normal, and he was responsive during interactions but otherwise quiet and restful. One notable symptom was his blindness, which developed between late August and early September. While he had mature cataracts in both eyes, suggesting significant vision impairment, the rapid onset raised concerns about possible central blindness originating in the brain. An exam showed that his pupils responded to light, indicating some light was reaching the retina, but it was unclear whether he could consciously perceive it.

Dr. Fitzgerald at MCFB reviewed diagnostic findings from October 2019, which indicated Gus had advanced atherosclerosis, with a mineralized descending aorta near the branches serving his legs, which likely contributed to his falling. Radiographs from that time showed a normal-sized heart and no visible osteoarthritis, though some degenerative joint disease might not have been visible on imaging. A small metal fragment was also observed in his stomach, but its significance—whether it was heavy metal like lead causing neurologic symptoms or benign—remained unknown. Gus was also believed to be hypertensive, likely related to his atherosclerosis, which could have precipitated stroke events contributing to his blindness. Treatment with a low dose of enalapril had been initiated. Dr. Fitzgerald's plan was to increase the dose and possibly add a second vasodilator, isoxsuprine.

Extensive lab work by Dr. Sanders had also revealed initially high cholesterol and triglyceride levels, which were later found to be closer to normal after a fasted blood sample. Other bloodwork was relatively normal, aside from mildly elevated bile acids (61 $\mu\text{mol/L}$), which suggested possible liver disease. However, Dr. Fitzgerald felt this elevation was not deemed particularly concerning, and the associated lactulose/milk thistle supplement might not have been necessary. Similarly, low T4 levels did not convincingly explain Gus's clinical signs, though supplementation posed no harm. Bloodwork did not indicate infectious disease, making it an unlikely factor in his symptoms.

The new investigative plan included updated radiographs and a cardiac ultrasound to evaluate his cardiovascular system and determine whether heart disease might explain his symptoms. Additionally, blood was to be sent to UC Davis for lead testing to assess the clinical relevance of the metal fragment observed in his stomach. Radiographs would also screen for any new abnormalities since the previous imaging. While a high-definition CT scan could provide detailed

information about Gus's arteries and atherosclerosis, it was deemed unnecessary at this stage due to its cost. The proposed approach was to start with radiographs, ultrasound and blood testing, then decide on further steps based on the results. Gus was to be sedated—but likely not anesthetized—for these procedures, pending approval to proceed.

Tests were approved and Gus underwent diagnostics without requiring anesthesia and was feeling better overall. A blood sample was collected for lead testing. Digital radiographs and a cardiac ultrasound revealed no evidence of heart disease, as his heart size, rhythm, and contractility were normal. However, advanced atherosclerosis was confirmed, providing an explanation for his reduced activity and falls. There was no significant osteoarthritis, and while a metal fragment in his stomach remained present, its significance was still unclear. The liver appeared normal on imaging. During the eye exam, severe cataracts were observed, causing near-total blindness. While some light perception was possible, the exact cause of his rapid vision decline since 2019 remained uncertain, potentially due to worsening cataracts or a stroke.

Treatment adjustments included an increased dose of enalapril and the addition of isoxsuprine to address his atherosclerosis. The liver supplement was deemed unnecessary, and the thyroid supplement was considered optional. Gus showed significant improvement, eating well (peanuts, seed and nutriberry) and appearing more alert, coordinated, and content, even preening himself. His aggression seemed to stem from his blindness, as he was startled by touch. Verbal cues were recommended for interaction, minimizing physical handling. He was set up with a low perch and accessible food and water, allowing him to navigate his enclosure safely.

Gus was sent home with his foster, who continued his care with prescriptions for enalapril and isoxsuprine. Handling was to be limited, using a towel for medication administration if necessary, though there was hope that he would resume taking medications via food as his appetite had improved. Updates on the lead test results and any follow-up steps were to be provided as needed, while Gus's foster was expected to keep the team informed of Gus' progress.

In July, 2020, Gus had an eye exam at Animal Eye Care in Lafayette, CA. The resulting report detailed the findings of an eye exam conducted on July 1, 2020. The cataracts in both of his eyes had caused complete vision loss, though Gus retained some light and shadow perception. No other signs of inflammation or eye disease were observed. The report outlined treatment options, including cataract surgery, which was the only method to remove the cataracts and potentially restore vision. However, the success rate for this procedure in birds was relatively low at 70-80%, and the risks were heightened due to Gus's underlying cardiac condition. Potential surgical complications included corneal ulceration, bleeding, inflammation, infection, glaucoma, and retinal detachment. The estimated costs were \$5,185.00 for bilateral cataract surgery and \$3,740.00 for unilateral surgery.

If surgery was not pursued, the veterinarian recommended annual eye exams to monitor Gus's condition. It does not appear that surgery was pursued.

In January 2021, Gus was prescribed meloxicam and gabapentin for screaming, which was suspected to be due to pain. The primary concern was potential neuropathy from ABV. Another medical visit at Wildwood was requested. It is unclear what the outcome of this was.

On Sunday, May 30, Gus's foster contacted Mickaboo, concerned about Gus's unusual quietness and subdued behavior. Following a discussion, Marisa administered an additional dose of tramadol with Gus's evening medications, which made him appear slightly more animated.

On Monday, May 31, Gus was transported to Dr. Tino Luehman's house for observation. During the examination, Tino noted nystagmus (involuntary eye movement) when Gus was stressed, especially when handled or wiggling, though the nystagmus subsided when Gus was still. He also appeared particularly sleepy, with harsh air sac sounds and an extra beat to his heart. Tino suspected a stroke-like event could explain the vestibular issue and asked about Gus's age and usual sleep patterns, noting that his symptoms could be related to poor blood flow.

By the evening, Tino reported Gus was slightly brighter, engaging with his environment by shredding newspaper, though he remained quieter than usual. Medications, including meloxicam, tramadol, gabapentin, and isoxsuprine, were increased. An ultrasound performed later in the day showed no obvious fluid, though the imaging quality was poor. Gus seemed more alert, keeping his eyes open more often, though nystagmus recurred with movement.

Tino proposed two options: sending Gus to the Medical Center for Birds (MCFB) the following day for an echocardiogram, radiographs and lab work (estimated at \$1,000), or continuing to monitor him with the increased medications for a few days to evaluate his progress. Tino believed that Gus's presentation strongly suggested a stroke, likely caused by poor blood flow. She recommended proceeding with further diagnostic workup if more neurologic signs developed.

On 6/9/21, Dr. Sanders evaluated Gus and provided two tube feedings as Gus had no stool in his droppings. By the following morning, Gus produced a small amount of stool. Dr. Sanders expressed concern about Gus's worsening heart condition, emphasizing a day-by-day approach to his care. He explained that as Gus's heart deteriorated, it impacted other organs, with the liver already showing effects and the kidneys likely to follow. Regarding the stroke symptoms, he believed Gus experienced multiple mini-strokes rather than a major one, which would have caused more pronounced deficits. Dr. Sanders suggested that significant plaque in Gus's carotid arteries might be impairing his brain function.

Gus's condition required close monitoring, and he would need to return for tube feeding if he worsened, stopped eating or produced no stool. Despite being offered appealing foods, Gus had not eaten yet. He was quiet and sleepy, though he had a brief talking period. Dr. Sanders also discussed Gus's quality of life and the potential for a natural passing, such as a heart attack, versus making the decision to euthenize.

On 2/7/22, Gus was taken to Wildwood for a nail trim, beak dremmel and thyroid level check.

In July of 2022, Gus has shown recent behavioral changes, including incessant screaming, shredding paper and eating through his cage's pegboard. His foster, who had been medicating Gus with Tramadol to manage his agitation, asked for another checkup at Wildwood.

In October, 2022, Gus's foster again expressed concern about Gus's unusual behavior, including spending time at the bottom of his cage cooing and not being his usual perky self. Marisa later reported that Gus was doing better after being picked up from the vet and was happy to be home.

In November, Gus was again exhibiting concerning symptoms such as lethargy, shivering and a drop in weight. He was taken for an emergency exam at Wildwood. Testing results showed that his CBC was much improved, but he was still exhibiting peculiar behavior. His total white cell count was normal at 7,300 (was 9,000 before). The distribution of types of white cells shows normal heterophils at 51%, normal lymphocytes at 44% and normal basophils at 5%. The percentage of red blood cells is slightly high at 57% so his foster was advised to make sure that he was drinking well and offer fresh water or moist fruits and veggies often. The white blood cells were no longer dark and shrunken as they were before but are now normal looking.

On 6/30/23, Gus's foster again reported behavioral changes. Dr. Peak inquired about Gus's response to Lasix. Iris Morales, RVT, suggested observing Gus off Lasix and monitoring his breathing. Marisa decided to hold off on Lasix and monitor Gus's condition.

In September 2023, his foster was concerned about a 56 gram weight gain in two weeks.

On 1/27/24, Gus was seen at Wildwood for a bald spot on the back of his head. His weight was stable and his stools were normal. The bald spot was considered most likely due to physical abrasion or something sticky pulling out feathers. Bloodwork was done to check his immune response, organ values and thyroid level. His beak and nails were trimmed. He should continue his medications for cardiovascular disease, pain, inflammation and liver support.

In April, his foster reported that Gus fell to the bottom of his cage, fluttered for 10 seconds and appeared dazed. He recovered and made it to his nighttime perch.

4/10/24: For unknown reasons, Gus's care was transferred to FTB. He thus becomes part of our 24 month study.

At FTB, between April and June, Gus was hospitalized for 31 days. Since April 2024, he's had at least nine exams, a myriad of tests including a direct fecal, a chemistry profile without CBC, gram stains, two panels with bile acids, 2 PCV/TP, a special screen for cholesterol and triglycerides, and two T4 (resting single). Treatments have included saline administered with an ultra fine mist sprayer, clavamox, three robenacoxib injections, unspecified oral, injectable and topical treatments, unspecified outpatient treatments, injectable hydration five times, an unspecified surgery, laser therapy and a continuation of enalapril and isoxsuprine.