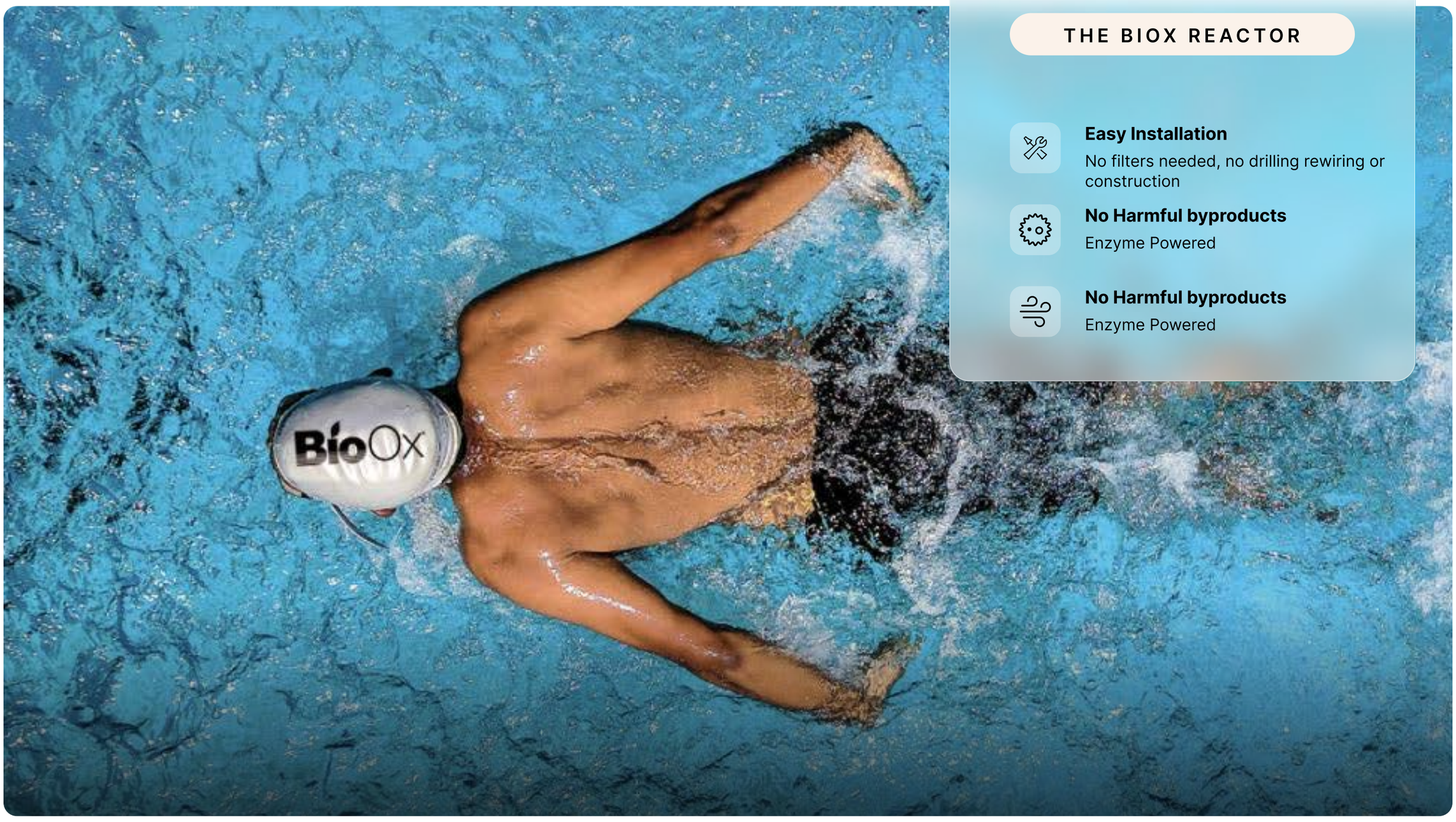
A FIELD BRIEF FOR INDOOR AQUATIC FACILITIES

The smell of an indoor pool isn't *chlorine.*

It's chloramine — it’s toxic and costly, contaminates indoor air. And it is bad for the health of swimmers & staff. Here's what the research says, and what to do about it.



THE BIOX REACTOR

Easy Installation
No filters needed, no drilling rewiring or construction

No Harmful byproducts
Enzyme Powered

No Harmful byproducts
Enzyme Powered

NEXT STEP

See how BioOx eliminates chloramines in indoor pools.

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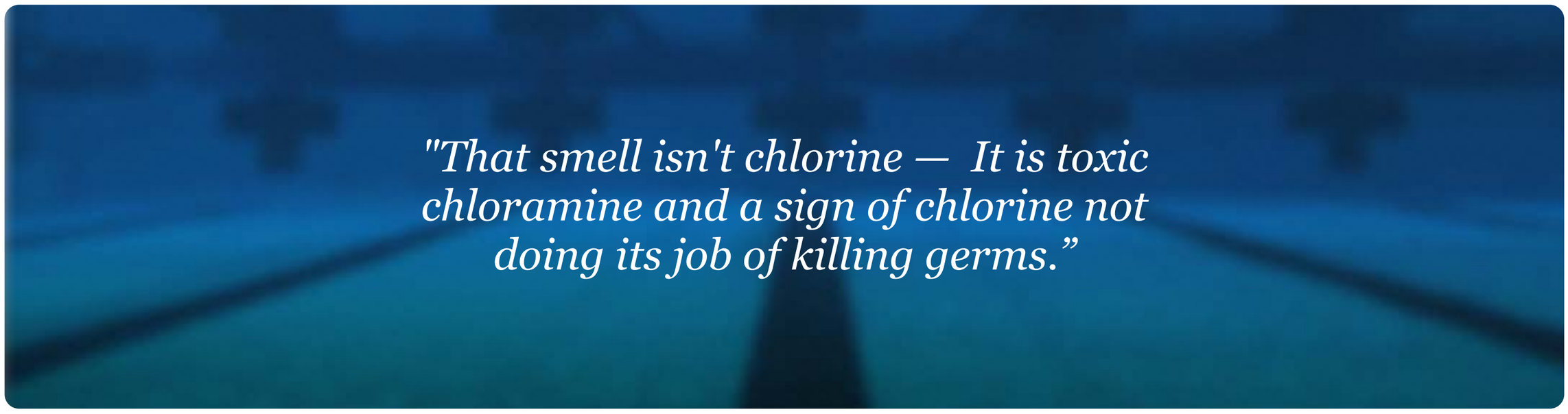
A FIELD BRIEF FOR INDOOR AQUATIC FACILITIES

FACILITY BRIEF · 01

Indoor pool air issues begin with *ammonia*, not chlorine.

A two-minute read for facility managers, aquatics directors, and the staff who breathe the building air every day.



Most indoor pool facilities believe the strong smell in their building is chlorine. It's not. It's **chloramine** and **other, even worse toxins** — a chemical byproducts form when chlorine reacts with sweat, sunscreen, and organic wastes brought in by swimmers.

For facilities, that means complaints, long-term liabilities, and preventable health issues for the people who spend the most time in the building — your staff.

What the research says

According to NIH and CDC research, chronic chloramine exposure in indoor aquatic environments is linked to:

- Nasal and throat irritation.
- Persistent coughing and wheezing, especially by swimmers during workouts.
- Triggered asthma attacks in members and staff, & champion swimmers while racing
- Occupational asthma onset in non-asthmatic employees.

THE REACTION

Cl_2 + Organic Matter

Chlorine + Sweat / oils

↓ PRODUCES

Chloramine Gas

The actual source of the smell

The BioOx Reactor was designed specifically to neutralize airborne ammonia, pathogens, chloramine, and toxins in enclosed aquatic environments.

Enzyme Powered

Natural neutralization at the molecular source.

Cleaner Air

Reduces chloramine and ammonia from the breathing zone.

No Harmful Byproducts

Safe for swimmers, staff, and surrounding equipment.

NEXT STEP

See how Ventilations alone falls short & How BioOx creates clean air zones.

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FACILITY BRIEF · 02

Why ventilation alone *falls short.*

> Dilution is not removal. HVAC moves contaminated air around — it doesn't neutralize what's in it.

Most natatoriums rely on HVAC systems to manage indoor air quality. The system was designed to move air — not to naturally destroy what's inside it.

What HVAC actually does:

- Dilutes contaminants by introducing outside air
- Circulates and re-circulates the same building air
- Drives up energy usage as load increases

What it doesn't do.

HVAC does not **destroy** chloramines. UV systems target living organisms — not chemical contaminants like ammonia. Both leave the underlying problem in place.

> *BioOx uses bio-oxidation to capture and destroy ammonia, chloramines, VOCs, bacteria, and viruses — at the pool surface.*

SIDE-BY-SIDE

HVAC
Moves air

Effective for temperature and humidity. Dilutes — but does not eliminate — airborne contaminants. Energy cost scales with load. HVACs do not move aerosols. Aerosols carry chloramines & germs

BioOx
Destroys contaminants *in real time*

Bio-oxidation neutralizes ammonia, chloramines, VOCs, bacteria, and viruses on contact. Installs without altering existing systems.

No ductwork | **No construction** | **No filters**

Traditional HVAC

HVAC does not move aerosols or remove chlorine gas

Chlorine/Chloramine gas sits at the water surface and remains in the space

With BioOx Units

BioOx Units create clean air zones

BioOx reactors pull in air, destroy chloramines at the source and release clean, healthy air throughout the space

NEXT STEP

Explore how BioOx-equipped environment reduced measured ammonia levels by **48% over 20 days.**

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MEASURED RESULTS · 03

Measured: a *48% drop* in ammonia over 20 days.

Independently observed in a controlled facility test — not modeled, not projected.

In controlled testing, a BioOx-equipped environment reduced measured ammonia levels by **48% over 20 days**.

Lower ammonia means:

- Reduced chloramine formation
- Less eye and throat irritation
- Lower chemical demand
- Cleaner breathable air

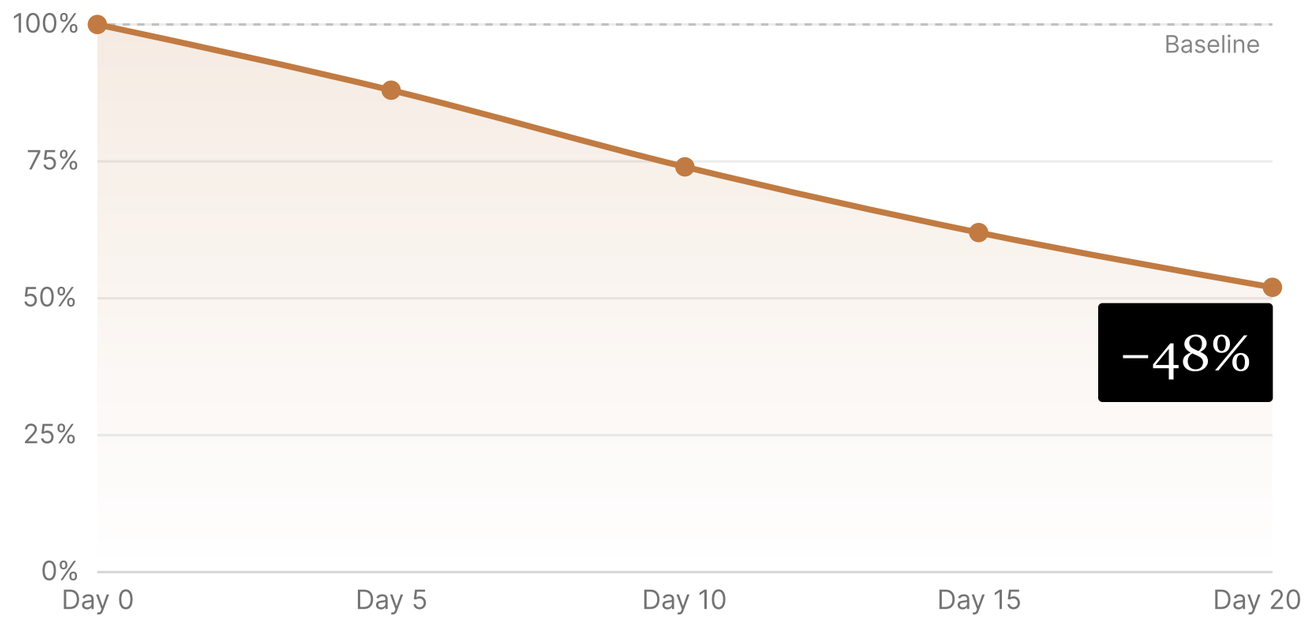
Hospital-based testing also showed significant reductions in airborne microbial populations.

> *This is measurable performance — not marketing language.*

AMMONIA · 20-DAY TEST

Ammonia Reduction Over 20 Days

−48%
VS. BASELINE



−48%	20	↓
Ammonia reduction	Days observed	Microbial load (hospital test)

NEXT STEP

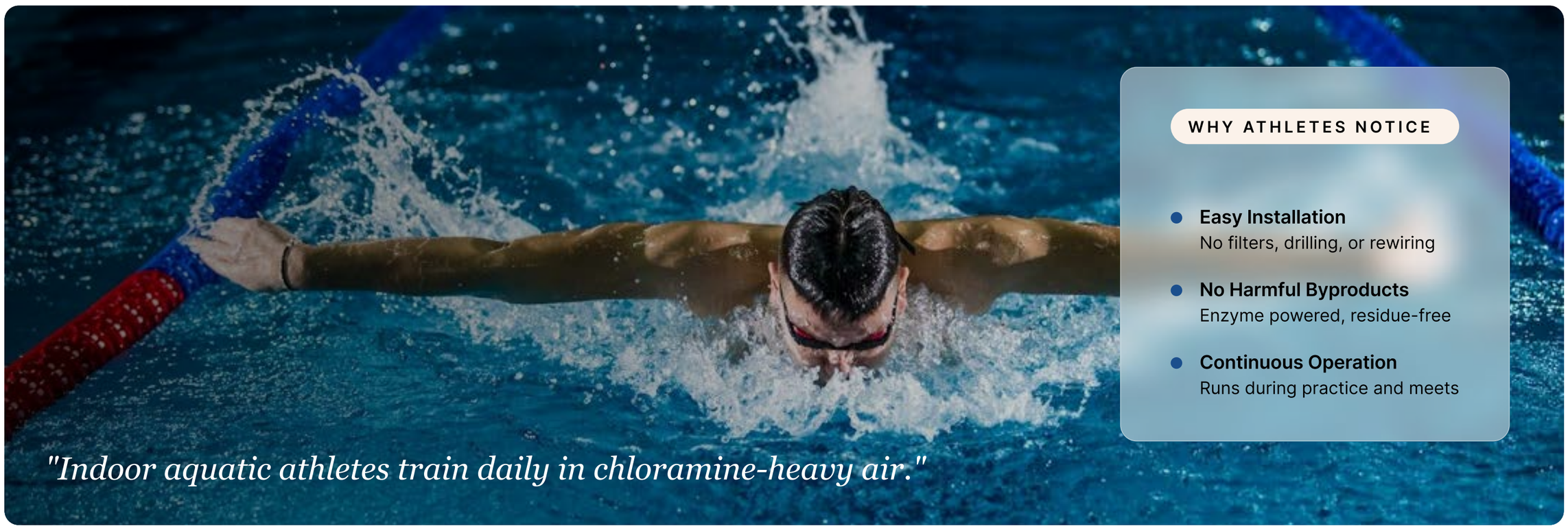
Review the performance data for aquatic facilities.

bioox.us →

COMPETITIVE EDGE · 04

Swimmers that *breathe better,* perform better.

Year-round indoor training means year-round exposure. Cleaner air is a quiet but compounding advantage.



WHY ATHLETES NOTICE

- **Easy Installation**
  No filters, drilling, or rewiring
- **No Harmful Byproducts**
  Enzyme powered, residue-free
- **Continuous Operation**
  Runs during practice and meets

"Indoor aquatic athletes train daily in chloramine-heavy air."

Indoor aquatic athletes spend more hours in chloramine-heavy air than anyone else in the building. Over time, that exposure measurably impacts the things they train hardest to improve.

Over time, chronic exposure impacts:

- Lung capacity
- Endurance
- Recovery between sets and sessions

BioOx creates a *"clean air zone"* within enclosed facilities & at pool level.

Targeted bio-oxidation at the breathing zone — where athletes actually inhale during training.

Cleaner air isn't cosmetic. It's *competitive & good for recruiting new swimmers & members.*

NEXT STEP

See how facilities are upgrading their training environments.

bioox.us →

OPERATING COSTS · 05

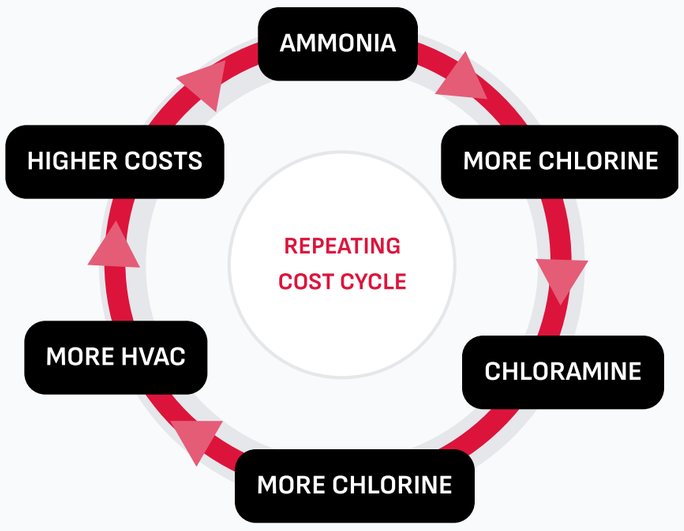
Chloramines are increasing your *operating costs.*

> *BioOx reduces ammonia at the source — and the cascade reverses.*

When ammonia accumulates in an indoor facility, the cost cascades:

- Chlorine dosing increases
- Ventilation runs harder, longer
- Energy use rises across the building - **corrosion takes place everywhere**
- Exertion of physical & mental power by staff

The Cost Loop



INSTALLATION

- Under 1 hour
- Plugs into standard 110V
- No new venting or construction required

Cleaner Air Reduces Chemical & Energy Demand.

When ammonia is removed at the source, operational costs cascade downward.

70% potential
Chlorine Demand Reduction

60% potential
HVAC Load Decrease

50% potential
Energy Cost Savings

80% potential
Chloramine Reduction

NEXT STEP

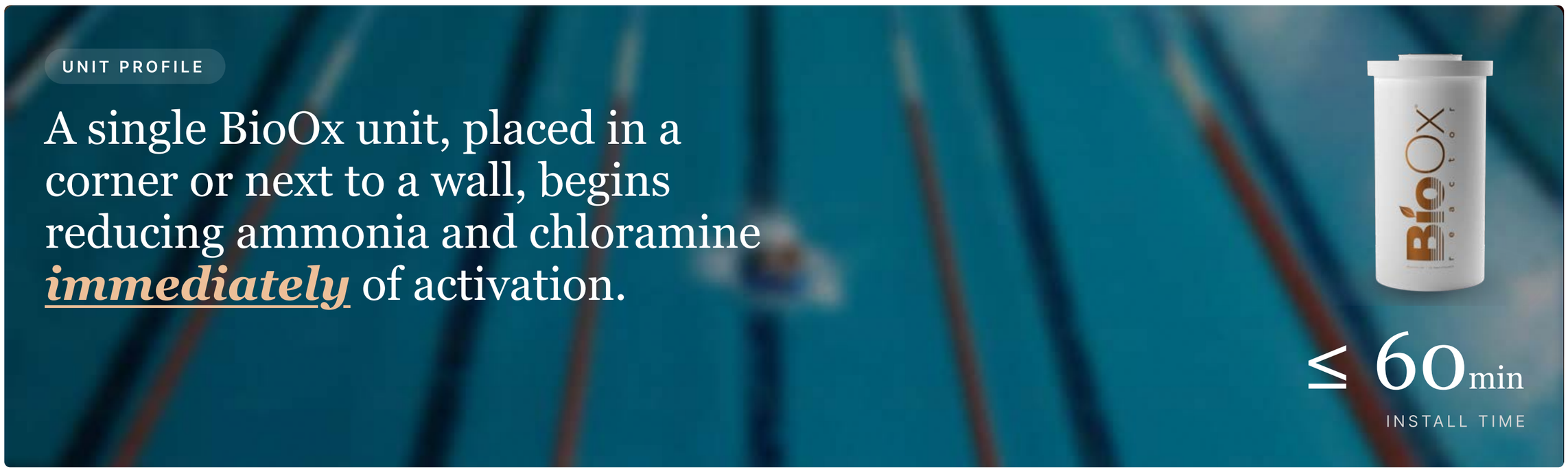
BioOx Reactor's are easy and quick to install - See how.

bioox.us →

DEPLOYMENT · 06

Installed in *under an hour.*

Designed for facilities that can't shut down operations. Open Friday. Installed Saturday. Running Sunday.



01
Plug into existing outlets
Standard 110V — no electrician required.

02
No duct integration
Stands alone. No HVAC retrofit.

03
No filters to replace
Bio-oxidation, not filtration.

04
Bi-monthly maintenance
Simple, scheduled, ~minutes.

MAINTENANCE

Maintenance is simple - Add water, BioOx Gold (enzymes), & plug in.

Change water every 2 months

- BioOx Units scrub the air of all contaminants
- BioOx Gold enzymes digest all organics including toxins, solvent vapors, carbon dioxide, ammonia, & chloramine. Therefore, only non-digestibles such as plastic particles, dust are left at the bottom which requires minimal clean up.
- Captures both airborne contaminants and aerosols - which no other air purifiers do.

OPERATIONAL CONTINUITY

Designed for facilities that can't shut down operations.

NO DOWNTIME REQUIRED

GET STARTED

Find the right model for your square footage.

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