

RESEARCH-LED ILLUSTRATIVE CASE STUDY

Hydration Strategy and Non-Contact Injury Risk

in Women's Football

An evidence-informed operational framework for clubs, academies and performance teams

This illustrative case study is adapted from postgraduate research and demonstrates how AB Consulting could translate hydration evidence into an operational framework for women's football organisations.

Prepared by Alberto Braibanti · 3 July 2026

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At a Glance

A concise walkthrough of the evidence, the descriptive dataset and the operating framework AB Consulting could deploy with a club or academy.

PREPARED BY
Alberto Braibanti
MSc Food Business Management

EDITED DATE
3 July 2026
Research-led illustrative case study

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01 — EXECUTIVE SUMMARY

Executive Summary

Women's football faces a substantial burden of non-contact injuries, particularly ACL and hamstring injuries. This case study presents hydration as one modifiable input within a broader performance and injury-risk system—not as a stand-alone explanation or guaranteed intervention.

AB Consulting translated a structured evidence review and a descriptive dataset into a practical Hydration Operating System (HOS). The framework is designed for clubs, academies and performance departments that need clear profiling, match-day protocols, environmental triggers and measurable implementation controls.

KEY EVIDENCE SIGNAL

In a FIFPRO analysis of 139 elite women players across the 2021/22 and 2022/23 seasons, 58 players were injured; 12 ACL and 19 hamstring injuries were recorded.

Source: FIFPRO (15 December 2023), New FIFPRO report on workload, travel and injury susceptibility in women's football

WHAT THIS CASE STUDY ESTABLISHES

- Hydration status can affect thermoregulation, perceived exertion, cognitive function and muscular performance.
- Fluid and sodium requirements vary substantially between players, supporting individual profiling rather than generic targets.
- Heat and humidity increase physiological strain and should trigger defined operational responses.
- Hydration is best managed alongside strength, load management, recovery, medical oversight and player education.

METHOD AT A GLANCE

Review approach	Structured evidence review
Evidence window	Peer-reviewed publications, 2015–2025
Sources searched	PubMed, Scopus and ScienceDirect
Population focus	Adults aged 18–35; women's football and athlete-hydration evidence
Descriptive dataset	137 observations, January 2023–September 2025

02 — CONTEXT & EVIDENCE

Context & Evidence

Hydration belongs within performance operations—not at the edge of them.



Concept visual: hydration, electrolytes, neuromuscular control and environmental heat load.

Fixture congestion, travel, higher playing intensity and environmental heat create a more complex performance environment. Clubs therefore need hydration decisions to be integrated with training load, recovery, medical protocols and catering delivery.

For women's football, the commercial and welfare case is especially clear: growing investment is increasing expectations for player availability, while the evidence base and operating standards must continue to become more specific to female athletes.

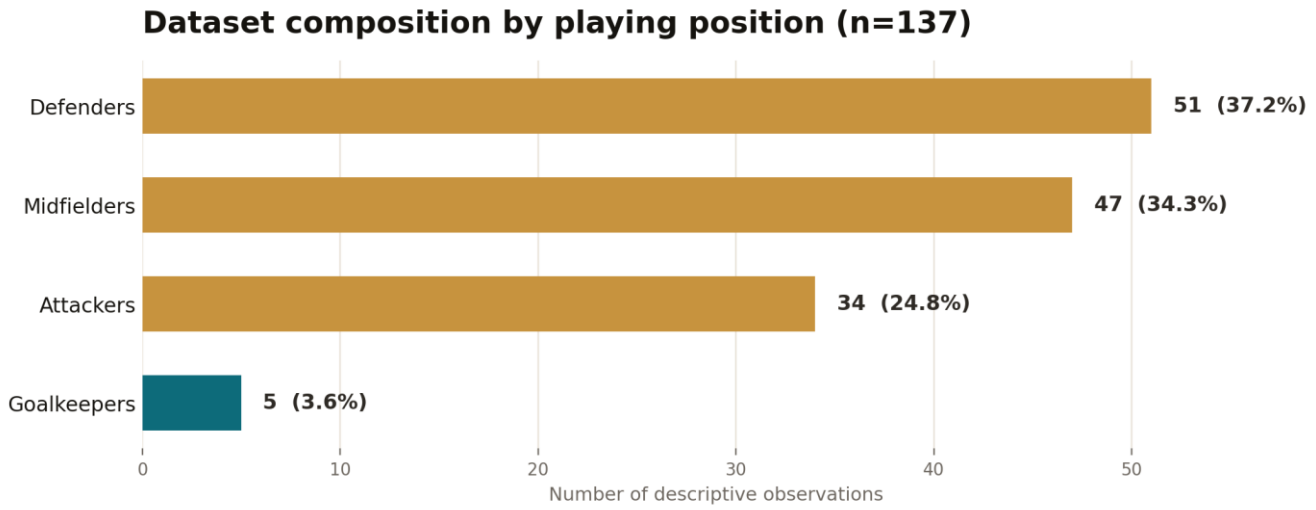
Performance availability	Environmental readiness	Women-specific development
Turn hydration from general advice into a monitored operating routine.	Link heat and humidity signals to clear staff actions and escalation.	Build a learning system around female-player data instead of adapting assumptions from men's football.

03 — DATASET

Observational Dataset: Scope and Limits

The dataset adds practical context, but it is descriptive—not proof of hydration-related causation.

The underlying dissertation dataset contained 137 recorded observations involving adult women footballers between January 2023 and September 2025. For this portfolio case study, the auditable quantitative comparison is the distribution of records by playing position: goalkeepers (n=5), defenders (n=51), midfielders (n=47) and attackers (n=34).



Counts describe the dataset composition; they are not injury rates and do not account for player exposure or squad size.

Population and coverage	Adult women footballers represented in the underlying research dataset. It was not designed as complete surveillance of a single league or tournament, so no competition-wide prevalence is claimed.
Variables used here	Observation period, playing position and record count. Injury-pattern information informed the wider research discussion, but individual hydration measurements and athlete-exposure denominators were not available for this chart.
Interpretation	The dataset can describe composition and generate questions. It cannot establish injury incidence by position, a causal link with hydration, or the effect of a hydration intervention.

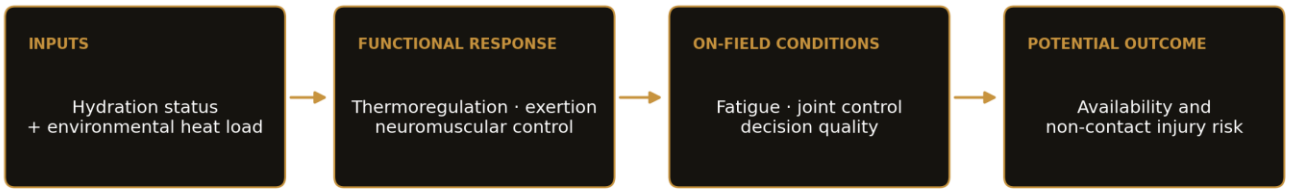
04 — APPROACH

From Evidence to an Operating Framework

The work was structured across three linked workstreams, moving from evidence review through an evidence-informed mechanism model to practical operating design.

A Evidence review	B Mechanism model	C Operational design
Structured review of hydration, performance, environmental stress and non-contact injury literature relevant to adults aged 18–35.	Translation of the evidence into a transparent pathway linking operational inputs, functional responses and potential outcomes.	Development of a scalable protocol, decision triggers, staff responsibilities and measures for a live pilot.

EVIDENCE-INFORMED OPERATING PATHWAY



Hydration is one modifiable input within a wider system that also includes strength, load management, recovery, medical oversight and player-specific factors.

LIKELY CLIENT STAKEHOLDERS

Head of Performance	**Sports Nutritionist**	**Medical Lead**	**Academy Director**	**Catering / Operations Lead**

05 — RECOMMENDED SOLUTION

The Hydration Operating System (HOS)

A scalable framework for converting hydration evidence into repeatable club decisions.

The HOS is organised around four integrated pillars. Each can be adapted to available resources, while the full system creates stronger governance, consistency and learning.

01 Baseline profiling

- Pre/post-session body-mass change where feasible
- Simple hydration-status check-ins
- Player flags: heat sensitivity, cramp history and prior injury

02 Match & training protocol

- Individual fluid-intake targets
- Electrolyte rules for heat and high-loss profiles
- Clear pre, during and post responsibilities

03 Environmental escalation

- WBGT-aligned action tiers
- Hydration breaks and active cooling
- Session redesign or rescheduling at extreme risk

04 Performance integration

- Strength, balance and landing mechanics
- Load, recovery and medical oversight
- Hydration positioned as one coordinated risk-control input

OPERATOR VALUE A single decision system connecting the performance team, sports nutrition, medical staff and catering delivery.

06 — OPERATIONAL PROTOCOL

Match, Training & Environmental Protocol

MATCH AND TRAINING SEQUENCE

PRE | 24h → 2h

- Set player-specific intake targets
- Review heat and sodium-loss flags
- Confirm product and staff readiness

DURING

- Use small, frequent intake opportunities
- Activate heat-escalation rules
- Record exceptions and symptoms

POST

- Replace fluids/electrolytes to estimated loss
- Avoid indiscriminate water-only replacement
- Capture recovery and compliance data

ENVIRONMENT-TRIGGERED ESCALATION (WBGT)

Action tiers remove ambiguity, but numeric thresholds must be aligned with the relevant governing body, competition policy, venue conditions and medical guidance.

TIER	TRIGGER	REQUIRED ACTION
LOW	Baseline conditions	Standard protocol and routine monitoring
MODERATE	Elevated heat or humidity	Increase break frequency; review electrolyte and cooling needs
HIGH	Sustained heat stress	Mandatory breaks; active cooling; reduce intensity blocks
EXTREME	Dangerous heat / policy ceiling	Redesign or reschedule; heighten medical oversight

Clinical governance: Implementation should be approved and supervised by the club's qualified medical and performance professionals.

07 — PILOT & SUCCESS MEASURES

How Success Would Be Measured

A 6–12-week pilot should validate feasibility and leading indicators; injury outcomes require season-level follow-up.

WHAT A PILOT INCLUDES

01 Baseline hydration and operational assessment	02 Player-risk and environmental profiling
03 Match and training hydration protocol	04 WBGT decision framework
05 Staff implementation guidance	06 Compliance and outcome-tracking dashboard
07 End-of-pilot findings and recommendations	

MEASUREMENT HORIZON

6–12 WEEKS | LEADING

- Protocol and staff adoption
- Pre/during/post compliance
- Body-mass change across sessions
- Heat/cramp symptoms and exceptions
- Dashboard data completeness

FULL SEASON | LONGER TERM

- Player availability percentage
- Days lost to soft-tissue injury
- Non-contact injuries per 1,000 exposure hours
- Repeat injury patterns
- Operational consistency across conditions

RECOMMENDED DASHBOARD CHARTS

CHART	METRIC	DECISION USE
Weekly line	Median body-mass change by session	Spot recurring hydration gaps
Stacked bar	Compliance across pre / during / post	Target staff or player support
Scatter	WBGT versus body-mass change or symptoms	Test environmental escalation
Season rate	Injuries per 1,000 exposure hours	Monitor long-term change responsibly

08 — EVIDENCE SOURCES

Selected Evidence Sources

A concise source list supporting the portfolio narrative; the underlying dissertation contains the fuller review record.

FIFPRO (2023)
New FIFPRO report shows increased workload, travel and insufficient rest in women's football is making players more susceptible to injuries, including ACL injuries. Open source

FIFPRO, PFA England, Nike & Leeds Beckett University (2024)
Project launched to reduce ACL injuries in women's football. Open source

Racinais, S. et al. (2023)
IOC consensus statement on recommendations and regulations for sport events in the heat. British Journal of Sports Medicine, 57(1), 8–25. Open source

McDermott, B.P. et al. (2017)
National Athletic Trainers' Association position statement: Fluid replacement for the physically active. Journal of Athletic Training, 52(9), 877–895. Open source

Barnes, K.A. et al. (2019)
Normative data for sweating rate, sweat sodium concentration, and sweat sodium loss in athletes: an update and analysis by sport. Journal of Sports Sciences. Open source

Braibanti, A. (2026)
MSc Food Business Management dissertation—the postgraduate research source adapted for this illustrative case study.

METHODOLOGICAL NOTE
This is a research-led illustrative case study, not a completed client engagement or clinical effectiveness trial. The operating framework should be tested prospectively, with agreed governance, exposure data and season-level follow-up before any claim of injury reduction is made.

09 — ABOUT AB CONSULTING

Expertise and Approach

INTERDISCIPLINARY CONSULTING FOR PERFORMANCE, CATERING & FOOD SYSTEMS

AB Consulting is led by Alberto Braibanti, an MSc Food Business Management graduate with experience across high-performance hospitality, large-scale catering and sports-event environments. The practice translates research and operational insights into practical frameworks that organisations can implement and measure.

Alberto's work spans sports hydration and performance, catering operations design and sustainable food systems—connecting evidence with the realities of staff, service and delivery.

EXPLORE A HYDRATION-PERFORMANCE PILOT

AB Consulting works with clubs, academies and performance organisations to translate evidence into practical, measurable operating systems.

WEBSITE · chefalberto.co.uk
EMAIL · albertobraibanti5@gmail.com
LINKEDIN · Alberto Braibanti

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