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Knowledge Base Report

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Foreword

The MAMA Project dataset stands as a pioneering, cross-border research endeavor designed to map the lived experiences of female athletes and the professional networks that support them through planning, pregnancy, postpartum return, and ongoing motherhood. By blending a comprehensive survey of athletes with in-depth qualitative interviews of coaches, physical educators, medical doctors, sports scientists, and athletic directors, this dataset provides an unprecedented 360-degree view of the maternal sports landscape. The project is a collaboration between nine organisations across Europe, representing the unified voices of sports professionals and athletes across nations.

At its core, this collaborative dataset exposes a critical universal truth: across different sports, competitive levels, and European regions, female athletes face a profound "support gap". Both athletes and support staff are routinely left to navigate these life-altering physical, psychological, and logistical transitions through reactive improvisation, personal financial sacrifice, and self-directed online research. By documenting these systemic educational and policy deficits, the MAMA Project aims to dismantle the traditional culture of silence and catalyse a shift toward structured, multidisciplinary frameworks of care that treat all athletes as equals.

Part 1

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Athlete Experiences of Motherhood



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Demographics

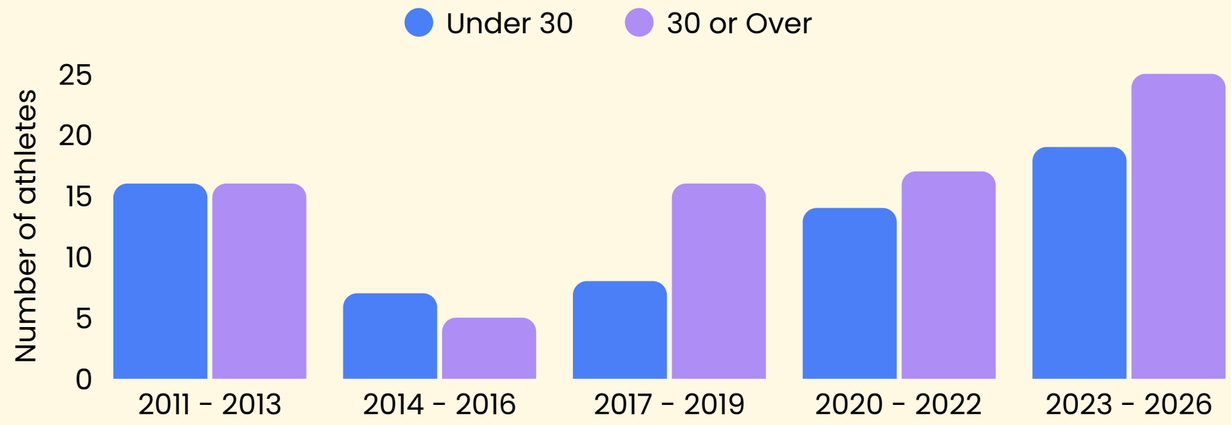
Survey participants covered a range of sports and competition levels

The surveyed participant group represents a highly diverse group of female competitors, offering a rich look at how motherhood intersects with sports careers. Surveys were distributed online via social media and through individual networks. The survey was available in 8 European languages and answers were translated to English for analysis.

The vast majority (85.4% in total) of surveyed athletes gave birth during their late twenties or early thirties. This is a critical window that typically represents the peak years for high-performance athletic achievement, illustrating the intense intersection of career and family planning for these women.

Among more recent births, athletes were more commonly 30 or over when they gave birth. This aligns with qualitative responses where modern athletes frequently cited waiting until they had achieved specific career milestones, completed competitive cycles, or established financial stability before starting a family.

Year when giving birth



143

Total number of survey respondents who met the inclusion criteria.

18

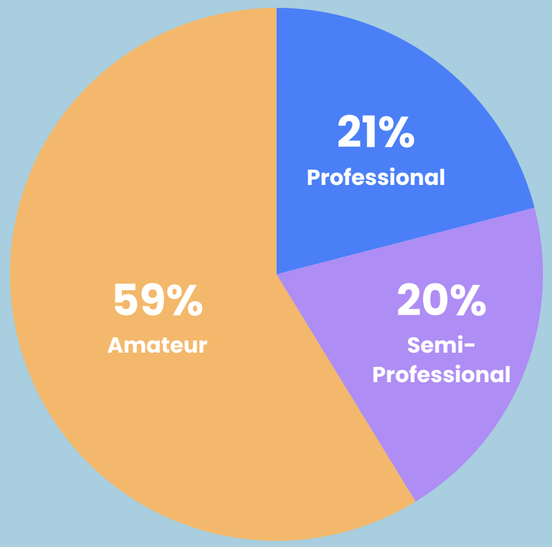
Number of nationalities reported by participants

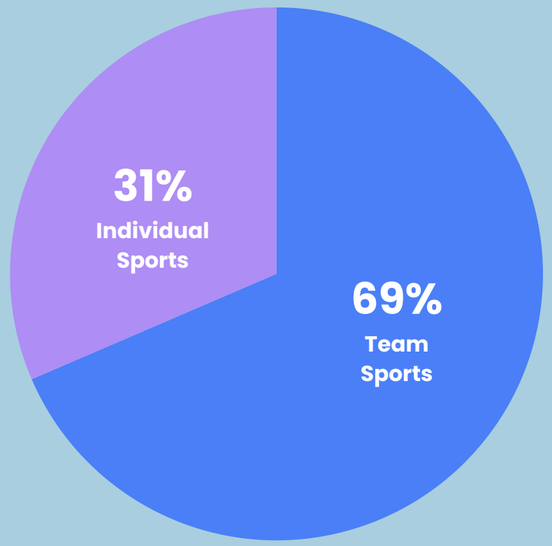
39

Number of sports played by participants

55%

Number of participants who gave birth over the age of 30.
The EU average age that mothers give birth to their first child has risen from 28.8 years to 29.9 years since 2013 (Source: eurostat)





Demographics

Survey participants covered a range of sports and competition levels

Participants who completed the survey covered a wide geographic area and represented a range of competition levels and professional statuses. The athletes were mostly grouped based on their nationality, except in cases where an athlete had resided outside of their home country during their pregnancy / motherhood experiences.

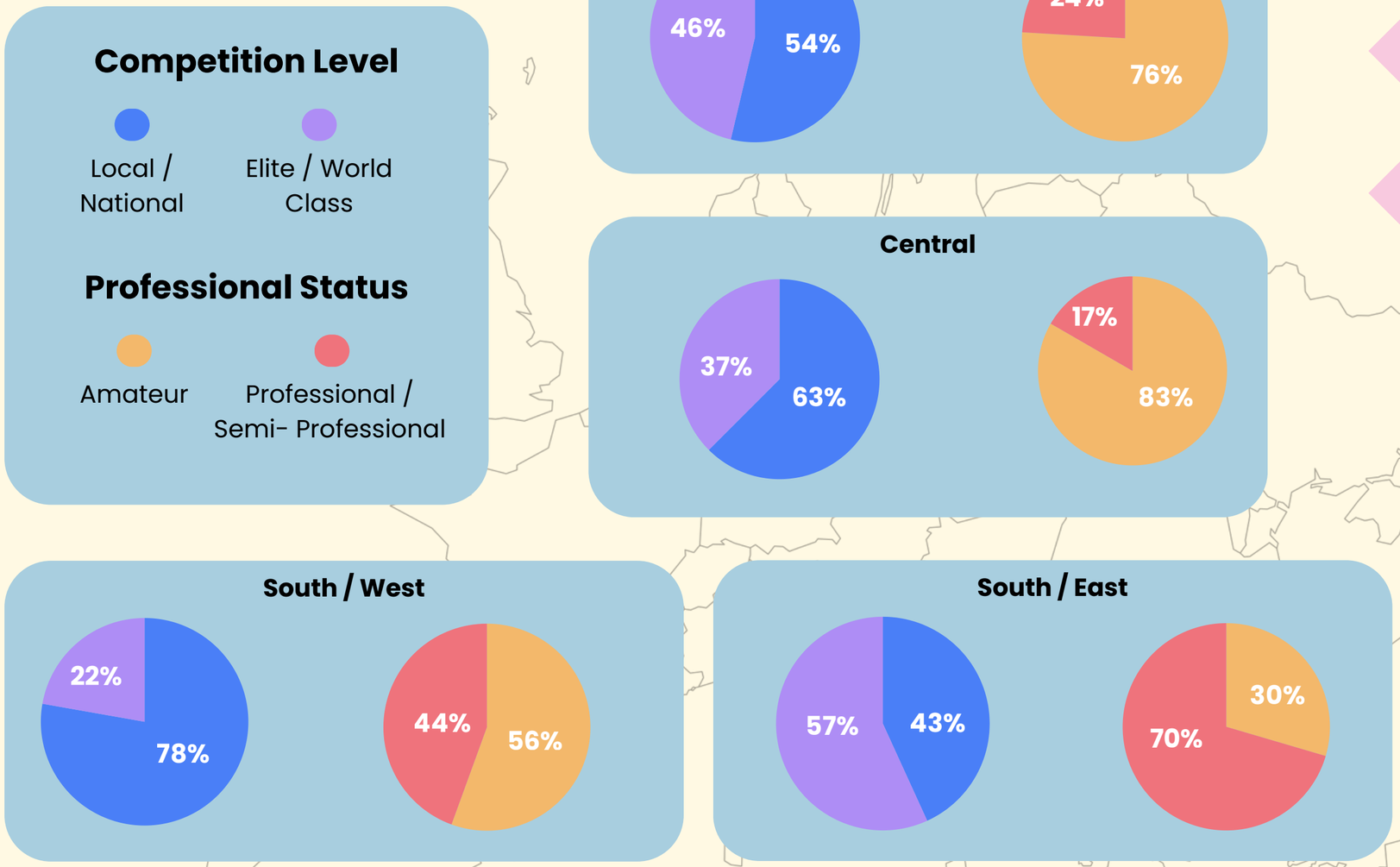
Athletes in the north were from the UK and nordic countries including Finland, Sweden and Norway.

The central region grouped athletes from Latvia to the Netherlands and as far south as Austria.

Athletes from Spain and Portugal were grouped into the south / west region.

The south / east region grouped countries from the balkans and more, including Greece, Serbia and Cyprus.

A small number of athletes from the United States were also included where geographic based experiences were not being explored.



Planning Pregnancy

Factors that influence the decision to become pregnant

The decision to get pregnant was influenced by a range of athletic, personal and biological factors. Whilst many pregnancies were unplanned, those that were planned often involved careful consideration of the sporting calendar and career longevity. Several of the experiences were shared across borders, whilst the influence of others was dependent on factors such as competition level and professional status.

Those athletes who reported pressure to become pregnant described a range of sources including, self, families and society.



Timing relative to the sporting calendar

Athletes frequently timed their pregnancies to align with the end of a competition season or the off-season to minimize the number of missed games or tournaments.

Personal and social support

The presence of supportive families, coaches, and teammates influenced how confident athletes felt in their ability to balance motherhood with a return to their sport.

Career Cycles and Milestones

Major global events such as Olympic cycles and the COVID-19 Pandemic significantly impacted planning with athletes timing their pregnancies in order to avoid missing active competition. Some chose to wait until they had achieved specific goals, such as winning world titles or medals, or until they felt the "peak" of their professional career had passed.

Biological and age related factors

Age was a recurring theme, with many athletes expressing concern over declining fertility after age 30. Some felt pressure from societal discussions regarding maternal age and wanted to ensure they could have children while it was biologically easier. In some cases, athletes chose to lighten their training specifically to improve their chances of conceiving.

Financial and professional stability

Financial stability and the status of professional contracts played a role. Professional and semi-professional athletes considered whether they had reached a level of income or sponsorship that would not be threatened by taking maternity leave. Amateur athletes were also impacted by financial concerns, despite their livelihood not depending on their sport.

Physical impact and health

Athletes in high-impact or contact sports often felt they had to quit playing immediately upon discovering they were pregnant for safety reasons, which influenced their decision on when to start trying. Interestingly, some athletes used the downtime required for rehabilitation from major injuries as an opportune moment to also pursue pregnancy.

76% of athletes surveyed had planned their first pregnancy

31% felt that pregnancy was compatible with performance sport

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External Influences on Planning

Financial and Competitive Pressures

The main financial and competitive influences on athletes' planning to become pregnant reveal a complex balancing act between career windows, biological timing, and financial security. Many athletes' athletic goals and the competitive calendar heavily dictated when they chose to try for a pregnancy.

Financial stability and professional contracts greatly shaped family planning. For professional athletes, the fear of losing their livelihood was a massive deterrent. Several athletes faced severe financial penalties for getting pregnant during their competitive contracts.



"I postponed getting pregnant by several months so that I could finish the season"

"I was left unemployed for that whole season with no income from anywhere"

76%
of participants planned their pregnancy

Financial Influences

49%
reported that their Financial security influenced their planning.

52% local / national
44% elite / world class

55% Semi-professional
50% amateur
39% Professional

26%
of those who made money in sport were influenced by their contracts / sponsorships

Competitive Influences

26%
reported delaying pregnancy due to their sporting career.

44%
reported that their competition calendar influenced their planning.

37% local / national
52% elite / world class

"I got pregnant during the season and I knew that they would stop paying me."

Training and Fertility

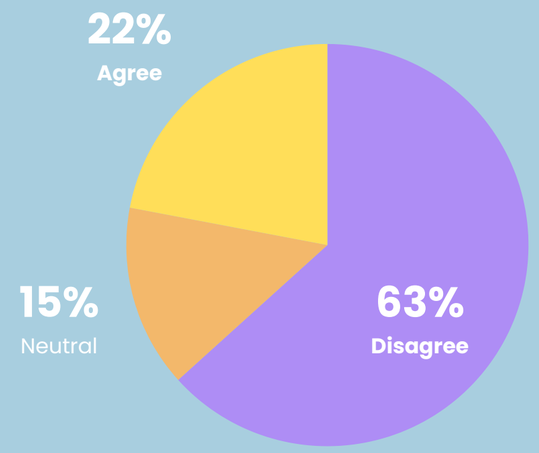
How did concerns about fetrility impact decision making?

The majority of athletes were not concerned about their fertility in relation to their training load. Of those who were, around ⅔ modified their training load in an effort to influence fertility.

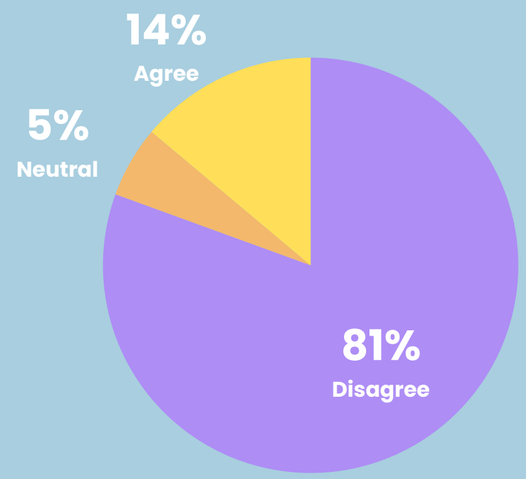
Although relatively few, those athletes who modified their training reported a range of reasons for doing so.

High-intensity training, heavy physical stress and exhaustion were perceived by some athletes as barriers to conception, prompting them to scale back. The physical toll of elite sport often disrupted athletes' reproductive health, driving them to worry about fertility and reconsider their training. Some athletes reported training-induced amenorrhea (loss of menstrual cycle) or anxiety over the transition from birth control medication to a regular menstrual cycle. For athletes undergoing medical fertility interventions such as IVF, reducing training load was considered a vital, protective measure.

I was concerned about fertility due to my training load



I modified training before pregnancy to support fertility





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Sports Specific Training

How did sports specific training loads change during pregnancy and postpartum?

Sports specific training was impacted earlier and more drastically amongst athletes compared to other types of training. Athletes from contact or high impact sports ceased training or modified it significantly. By the second trimester, almost all of the athletes were training at lower levels or not at all in their sports.

The return to sport specific training postpartum showed a gradual increase, although at 13 weeks, ¼ of athletes were still not doing any sport specific training at all.

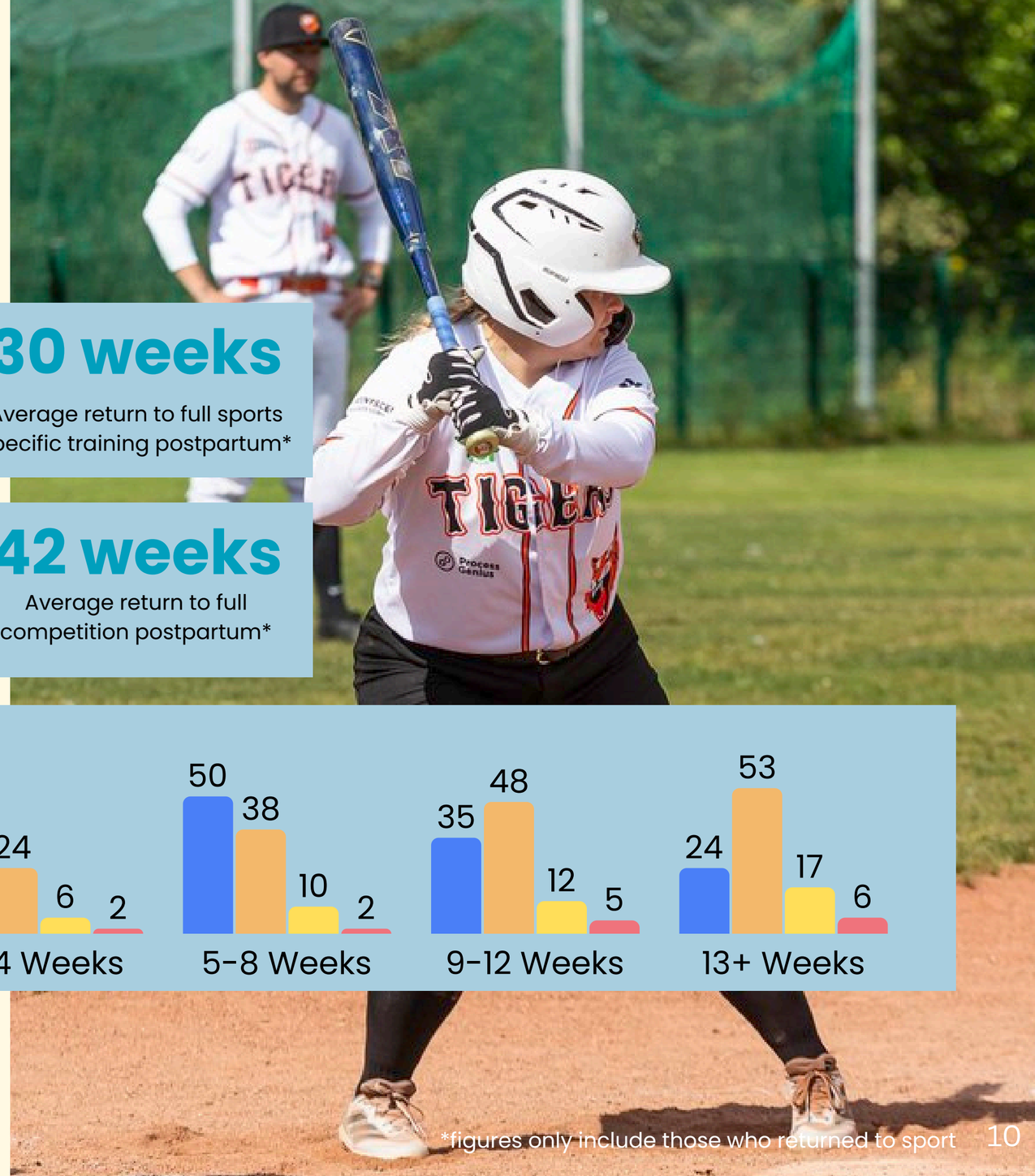
Athletes who increased their sports specific training loads came from a broad range of sporting backgrounds, including both individual and team sports.

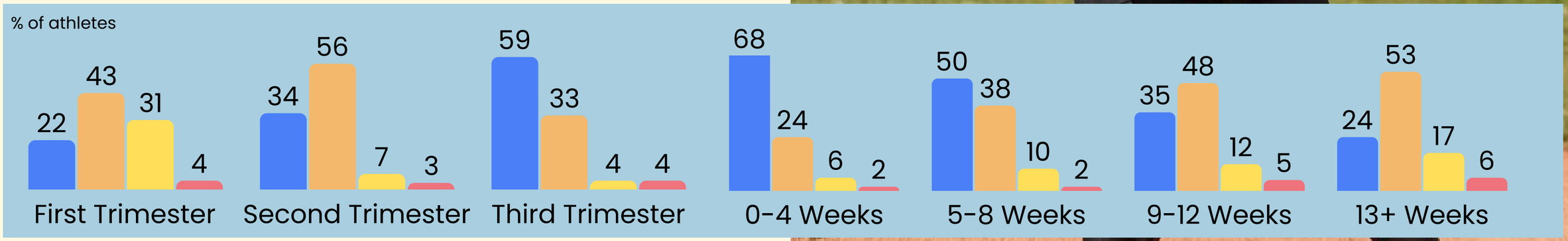
30 weeks

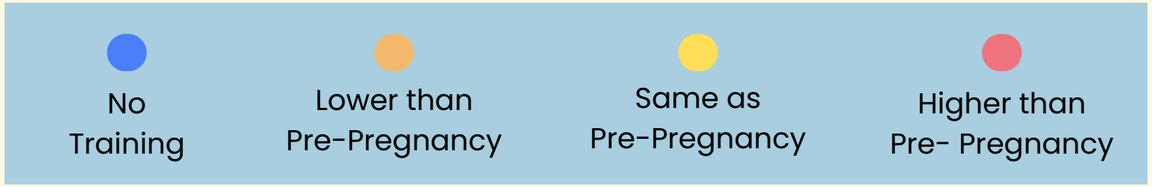
Average return to full sports specific training postpartum*

42 weeks

Average return to full competition postpartum*







*figures only include those who returned to sport

Strength Training

How did strength training loads change during pregnancy and postpartum?

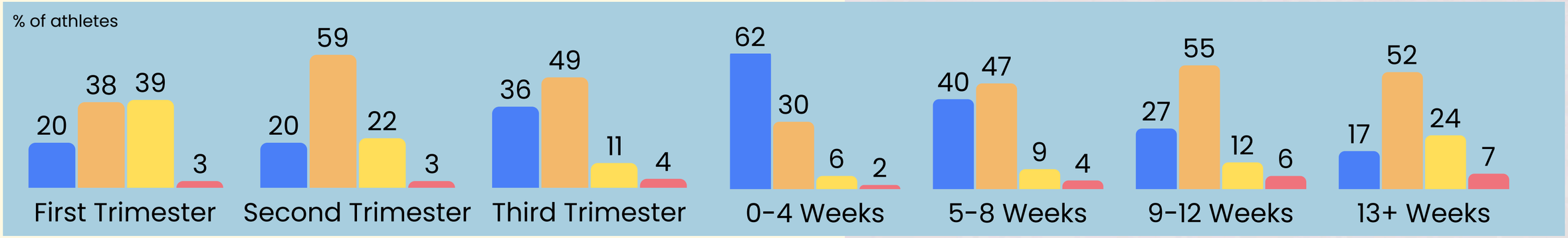
Compared to sport-specific training, which athletes often had to drop rapidly due to impact risks or team dynamics, strength training was maintained at higher levels throughout pregnancy and served as a key strategy for keeping active. However, strength training still experienced a progressive decline during pregnancy, followed by a slow, step-by-step rebuilding process postpartum. In comparison to the 59% of athletes who completely stopped their sport-specific training in the third trimester, strength training was kept up much more consistently.

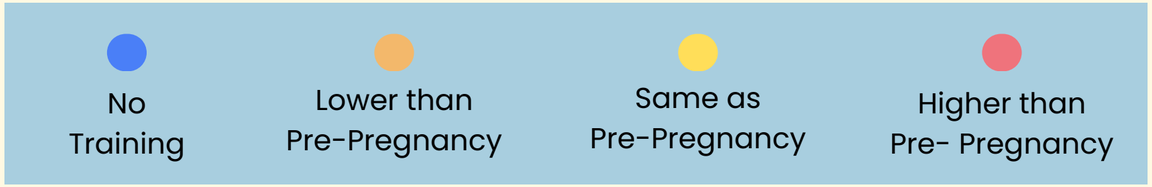
13 weeks after giving birth, 24% of athletes had successfully returned to their pre-pregnancy baseline load, and 7% were training above baseline. However, a substantial portion remained restricted: 52% were training lower and 17% were still doing no strength training.



23 weeks

Average return to full strength training postpartum*





*figures only include those who returned to sport

Aerobic Training

How did aerobic training loads change during pregnancy and postpartum?

Like strength training, aerobic conditioning was maintained at higher levels during pregnancy compared to sport-specific training. It was highlighted as a safer, more controllable alternative for athletes looking to stay active. However, aerobic training loads still underwent a progressive decline as pregnancies advanced, followed by a gradual rebuilding process postpartum.

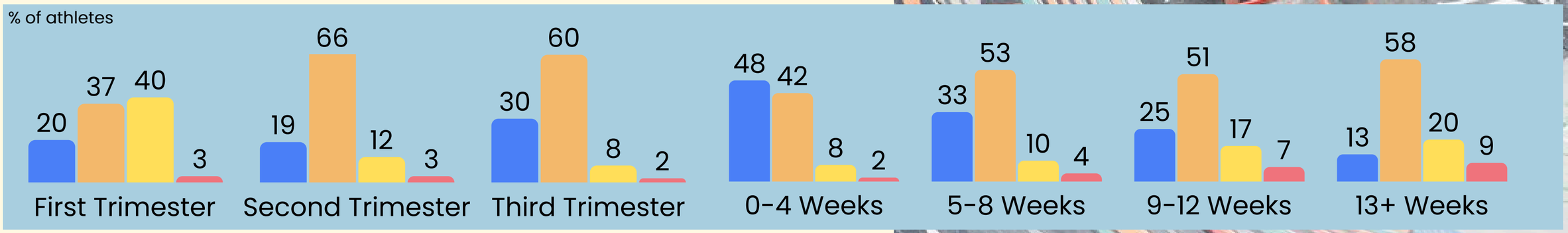
While 30% stopped aerobic training in the third trimester, this is vastly superior to sport-specific training, which was completely abandoned by 59% of the cohort in the final months.

Three months after childbirth, 29% of athletes had returned to their pre-pregnancy baseline or higher volumes of aerobic training. However, a majority still trained below pre-pregnancy volumes or not at all.

22 weeks

Average return to full aerobic training postpartum*





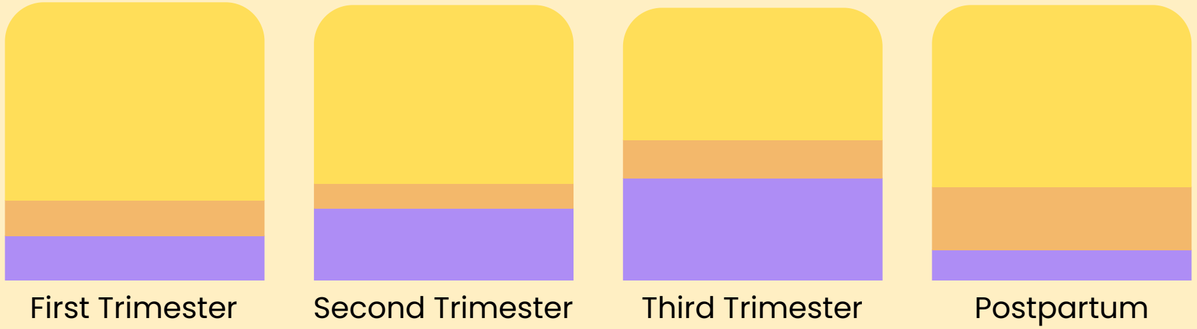
*figures only include those who returned to sport

Training Intensities

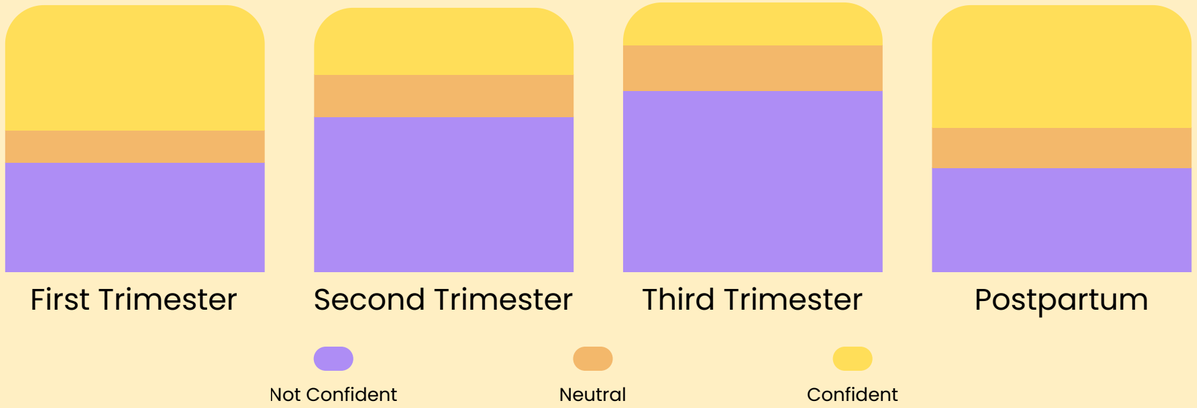
How confident did athletes feel training at moderate to high intensities?



Moderate Intensity (%)



High Intensity (%)



Most athletes felt confident to continue training at moderate intensities during their first and second trimesters. Only during the third trimester did confidence levels become more polarised. At this point, elite athletes in non-contact or individual sports such as fencing, crossfit or running maintained confidence where team sport athletes reported physical limitations.

Elite athletes in individual sports such as crossfit, athletics and weightlifting maintained high levels of confidence in intense training throughout pregnancy. However large numbers of athletes expreienced less confidence in high intensity training compared to moderate intensity. Athletes from team and contact sports in particular experienced a lack of confidence from an early stage.

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Training Load and Intensity

Trends across the sample

Training of all types followed a clear pattern of progressive decline throughout pregnancy and peaking in the first 4 weeks postpartum, before following a progressive return to full participation beyond 13 weeks. Sport specific training saw the sharpest decline in load during pregnancy and also the most gradual return postpartum. Conversely, more athletes continued to engage in strength and aerobic training for longer into their pregnancies, returning quicker following giving birth.

Training for contact sports

There was a range of responses returned by athletes who competed in contact or impact sports such as rugby, american football and karate. Whilst most athletes stopped sport specific training immediately, a small number to train in some way for their sport all the way into the third trimester.

Pressures

Several athletes reported external pressures impacting their decisions around training. For some, this came through a desire to remain fit for an easier return to sport, although this could be motivated intrinsically or by fears over career loss. Other athletes felt pressure to stop training due to team dynamics or the social expectations that pregnant women should not be training.



Ambiguity over guidelines for contact sport

"I had to quit playing rugby right away. For me it didn't feel safe to play rugby even in the early weeks of my pregnancy."

"I quit playing floorball before my IVF journey to make sure no damage would come to my torso area"

"It wasn't so much about the timing, but more about the impact contact sports have on your body and not knowing what kind of effect that has."

"It is a contact sport: after first 12 weeks of pregnancy I had to take a break from playing."

"The fear of a miscarriage in the first weeks caused by activities with impact"

Maintaining a foundation for return to sport



"There was pressure that it would be easier to return to the playing field if you trained through pregnancy."

"I was keen to stay active during pregnancy and return to sport postpartum and I was nervous about being able to return to activities as I hoped."

"I felt a certain need to practice so that I could show .... that I am not going to end my career, even though I am about to have a child."

Social pressure

"My team also voiced a concern that they didn't want pregnant women attending practices which made me feel excluded and lonely."

"The team did not welcome my pregnancy with joy."

Guidance on Training

Athletes’ experiences of medical guidance

Athletes' experiences with medical guidance were highly polarized, but a clear trend emerged regarding the lack of specialized knowledge for high-performing individuals. A large portion of the cohort strongly disagreed that they had clear medical guidance. Comments explained that general medical advice was often "very cautious" or consisted primarily of "prohibitions" (e.g., "just stop") rather than proactive training adjustments. Many athletes noted they had to find their own specialized sports-medicine experts or pelvic floor physiotherapists because the advice from general maternity clinics was not applicable to athletes. Athletes who felt well-supported by medical professionals were often those with access to private or specialized networks, such as those in elite-level sport.

Athletes’ experience of coaching guidance

Guidance from coaches was generally rated lower than medical advice, highlighting a widespread lack of maternity expertise within sports coaching. Many athletes reported a total lack of coaching guidance, whilst some coaches were actively unsupportive. For example, one athlete noted her coach "forbade" training during her pregnancy. Another felt her coach and federation "wrote her off" as soon as she became pregnant.
Strong coaching guidance was most common among elite athletes or those in individual sports where the athlete-coach relationship is more personalised. In team settings, several athletes mentioned they were "alone" in their situation, as coaches and teammates didn't know how to handle a pregnant player.

General guidance on training

“Maybe more clear advice and direction on what you can actually do and how late. Some advice could be found online but this required searching and critical evaluation. The official guidance from general healthcare professionals is very cautious.”

“I mainly relied on role models/team mates and my own feeling to follow guidance on training and competition intensity. More knowledge and guidance from coaches would be helpful”

it would be difficult to regain the physical condition I was in without any support from the team I was part of.”

“I would never advise anyone to get pregnant during their career. It is very difficult and tiring to achieve both, it takes a huge help from the family, coach, club and everything and that is very difficult to make possible.”

Guidance from coaches

“If only there had been a coach who would have known and been able to help with training during pregnancy and after pregnancy”

“I would have needed a coach who would work with me within my sport, who would have enough knowledge to say with certainty what I can do and what I can't do during pregnancy so that I don't fall out of the gym”

“There was no support from an agent or a coach to help me fully recover what I did, I did it on my own”

“I had a coach who did not support me participating in the trainlng.”

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Sources of Information

Where did athletes get information about safe training?

Athletes primarily gathered information about training during pregnancy and postpartum from online resources, peer networks of other mother-athletes, and general (non-sports) medical professionals.
Official athletic networks - such as sports coaches, specialized sports doctors, and national federations - were rated as the least common or least helpful sources of information, leaving a significant guidance gap.

A support gap for sports specialists

Specialized sports professionals were marked remarkably low as sources of information, indicating that athletes rarely received clear maternity or training advice from their sports organisations. Most athletes reported having to navigate their physical return to sport entirely on their own, often having to independently seek and fund specialized sports gynecologists or pelvic floor physiotherapists because their clubs and coaches lacked basic maternity training knowledge.
This was true of both local / national level athletes and elite / world class athletes, although the latter reported slightly better scores for team staff, and much higher rates from non-team physiotherapists / trainers.

Online Resources

With structured guidelines lacking in the sports community, athletes took research into their own hands. One athlete noted that while she was able to find some advice online, it required extensive "searching and critical evaluation" because the general public healthcare advice was too cautious

Other mother athletes and teammates

In the absence of formal guidance, athletes relied heavily on those who had already gone through the process to learn about training modifications, breastfeeding, pelvic floor recovery, and managing sleep deprivation. One athlete noted that "the teammates who gave birth were the best support"

General Healthcare professionals

Non-sports-specialized medical professionals were highly utilized but frequently drew criticism for their lack of athletic knowledge. While doctors and nurses at general clinics were frequently consulted, athletes reported that their advice was usually limited to vague, overly cautious warnings (like "be careful") or strict prohibitions ("just stop") rather than tailored training programs



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Sources of Information

Northern Europe: Self-directed research

Northern athletes reported the highest reliance on self-conducted online research and peer networks, alongside some of the lowest levels of official coaching or specialised medical support. While general healthcare professionals were consulted, their advice was often viewed as too cautious or irrelevant to high-volume training. One athlete noted: "General guidelines that you might receive from the maternity unit are not applicable to athletes or pregnant women who train a lot and at high intensity"

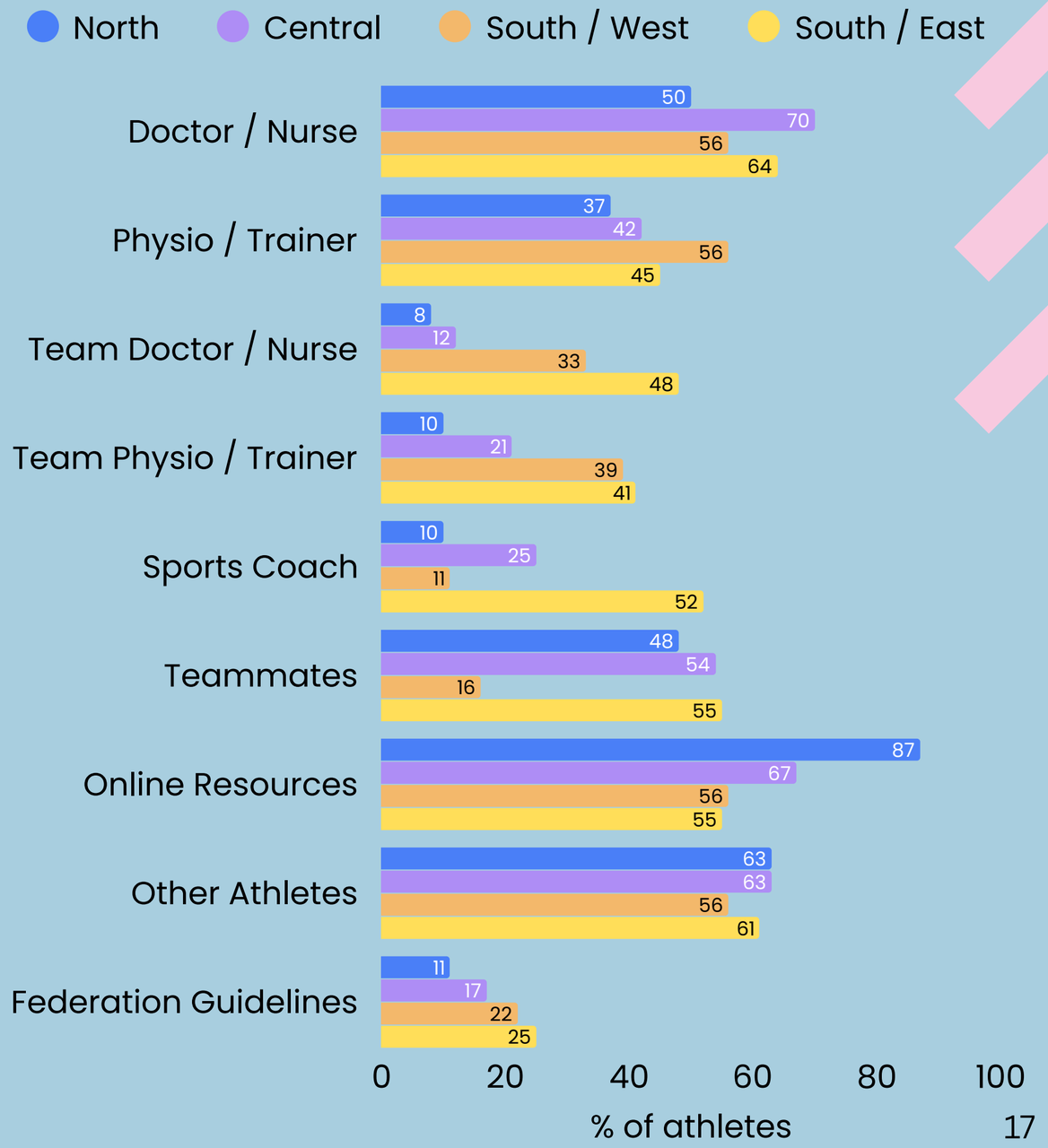
South Eastern Europe: Organisational support

South-eastern athletes experienced much closer integration with their coaching and sports-medical staffs. They reported the highest levels of guidance from their sports coaches and specialised sports doctors of any region surveyed. Despite this higher relative support, competitors still noted a need for more systematic, research-backed expertise. One athlete expressed a desire for "more specialised medical and coaching guidance for pregnancy in high-level athletes," while a swimmer wished for "better guidance from a doctor and coach on how to plan for pregnancy".

However, it is important to recognise that this trend towards more organisational support can be influenced by the higher proportion of professional and semi-professional athletes surveyed in the region.

41% Felt that they were supported in return to sport postpartum

Percentage of athletes receiving 'good' or better information from each source



Psychological Challenges

The psychological challenges faced by athlete mothers

Athletes in this study faced a wide range of profound psychological challenges spanning from the onset of pregnancy through their postpartum return to sport. These struggles were driven by clinical mental health issues, identity crises, intense social judgment, and systemic exclusion.

Postpartum depression and mental health struggles

Several competitors explicitly detailed battles with postpartum depression.
One athlete recalled feeling lonely, sleep-deprived, and like a "failure" under the weight of normal postpartum adjustments, which eventually culminated in depression.
Another described how postpartum depression caused her to lose substantial muscle weight, presenting a massive mental and physical hurdle she had to overcome before she could safely rebuild her strength and return to her sport.

Identity crisis and the ‘loss’ of the athletic self

Transitioning into motherhood forced a major - and often painful - re-evaluation of personal identity. While some athletes assumed they could easily maintain their pre-pregnancy self-image, many experienced a sharp shift in priorities. For several women, stepping into motherhood felt like it took away a core piece of their athlete identity.

One athlete described a difficult psychological struggle: she desperately wanted to identify as the high-level player she used to be, but felt that she had to accept she was no longer that person. Others noted that motherhood did not just expand their old identity but replaced it with a "completely different identity" that they were still trying to figure out and understand years later.

75% Felt supported by teammates and team staff



41%

Reported some psychological challenges postpartum

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Psychological Challenges

Exhaustion and cognitive overload

Managing the dual demands of high-level sport and parenting led to severe mental fatigue. Athletes struggled with extreme tiredness, lack of sleep, and a loss of concentration. Many found it difficult to accept that their overall cognitive and life load had increased dramatically, leaving them with far fewer mental resources to dedicate to training and recovery.

Anxiety, guilt and the ‘bad mother’ stigma

Athletes navigated high levels of anxiety and guilt, which were often reinforced by partners, families, and society.

During pregnancy, some athletes and their partners suffered from severe anxiety that high-intensity training or physical impact would cause a miscarriage or harm the baby.
Postpartum, taking time away from the baby to train was a major source of guilt. One athlete highlighted a painful double standard, stating that unless you are a professional, society judges you as a "bad mother because you decided to train and not spend every minute of your time with kids".
A basketball player explained that being publicly criticized for leaving her child behind to practice - combined with the constant worry of arranging childcare - severely damaged her mood, focus, and concentration on the court.

Social isolation, judgement and feeling ‘written off’

The sports community itself was frequently a source of psychological distress, with clubs, coaches, and teammates alienating pregnant athletes.

One athlete shared that her team explicitly voiced concerns that they did not want pregnant women attending practices, leaving her feeling isolated and lonely. Another athlete felt constantly judged and unwelcome upon her return, noting that the technical staff openly treated her with hesitation, fearing she would miss workouts if her baby fell ill.

Multiple athletes felt instantly dismissed by their sports organizations once they became pregnant. A competitor recalled that "most people had already written me off... no one believed I could return to a professional level". An elite individual sport athlete explained that she felt an anxious, compulsory need to train through her pregnancy simply to prove to her federation and coaches that she was not ending her career, fearing she would otherwise be ignored during future selections.

83%

Returned to sport when they felt psychologically ready

78%

Returned to sport when they felt physically ready



Motherhood

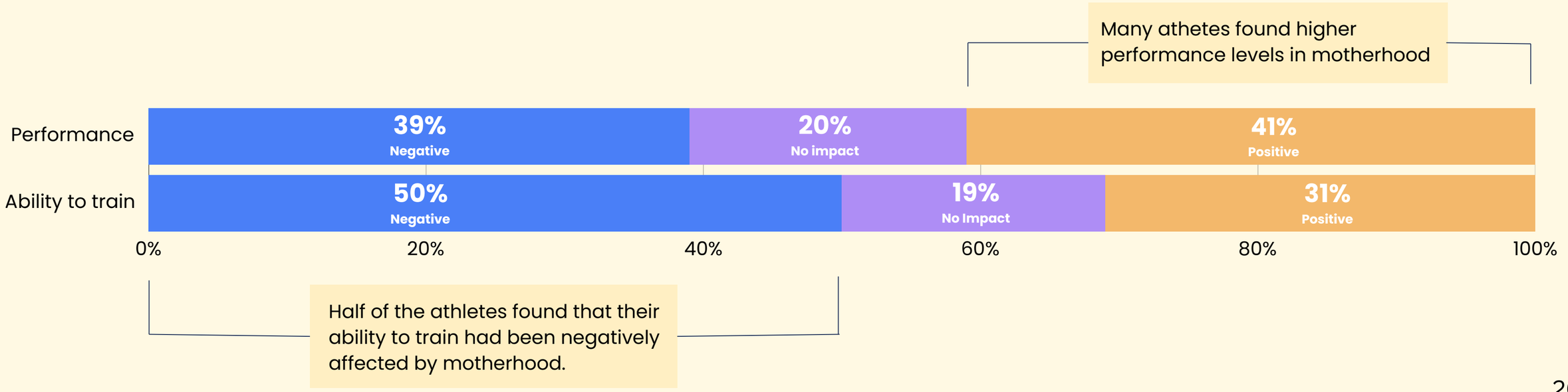
How has motherhood impacted training and performance

Athletes reported motherhood affecting performance both positively and negatively through different lenses. These impacts were a highly individualised mix of physical setbacks, severe constraints on recovery time, and profound psychological growth.

The psychological impacts of motherhood are particularly revealing in terms of identity as a mother-athlete and also in the support to train and perform to prior levels.



How did motherhood impact athletic performance and the ability to train?



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Motherhood

Increased maturity, motivation and focus

For a substantial number of competitors, the mental changes brought by motherhood served as a powerful performance enhancer.

Many athletes reported returning to play feeling mentally stronger, more mature, and more resilient. They noted a reduction in fear and a higher capacity for stress management. Limitations on training time forced athletes to become more organized, efficient, and purposeful during workouts.

Shifting their primary identity to "mother" allowed some athletes to play with a sense of greater freedom and less fear of failure, because their self-worth was no longer tied exclusively to their sporting achievement.

Physiological and physical obstacles

Conversely, the physical toll of pregnancy, childbirth, and breastfeeding presented major challenges to raw physical performance.

A recurring theme was a noticeable decline in speed, cardiovascular power, and explosive strength. Structural changes - such as weakened pelvic floors, joint laxity, and diagnosed abdominal muscle separation (diastasis recti) - directly interfered with core control, making high-intensity movements wobbly and unfamiliar. Some athletes struggled with poor postpartum physical preparation, which led to a piling up of major injuries that they had never experienced pre-pregnancy.



Increased maturity, motivation and focus

"My performance changed mainly because I saw the body and training more maturely. I didn't have the same daily routine as before, but I had more mental strength and pure motivation."



"Motherhood made me mentally stronger. When I became a mother, I stopped fearing failure so much and strove with greater freedom."

"After motherhood I felt that I came back more mature and more focused. It may have taken time for me to fully recover, but I gained better stress management, more confidence and a different perspective on sports. This helped me perform at a high level and face challenges with more composure."



Physiological and physical obstacles

"I was slower on the field, had less muscle strength and weaker joints."

"I did not feel physically confident in my body after and especially my core, which had always been very strong felt weak and unfamiliar. My knees and other joints also felt wobbly for several months. I also felt slower."

"I did not have as much power for sport as before. I had less energy."

"My pelvic floor has changed. The core does not work in the same way as before."

"Before the pregnancy, I hadn't had a single serious injury, whereas after giving birth, major injuries just kept piling up.."

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Motherhood

Tactical adaptations: Smarter training

To compensate for diminished physical capacity, several athletes adapted their playing styles or altered how they trained.
Athletes shifted from raw high-volume workouts to mindful, high-quality, and technical training.

Some athletes compensated for physical declines by developing alternative skills and adjusting their tactics to remain highly valuable to their teams.

Peak performance outliers

Despite these hurdles, several athletes reached the absolute peak of their athletic performance postpartum. These elite performers managed to exceed their pre-pregnancy benchmarks, with one athlete noting that the discipline and structural rehabilitation she underwent postpartum actually made her core stronger than it had been before giving birth.

The constraints of global load on recovery

Often, it was not the actual workouts that suffered, but the ability of the athlete's body to recover afterward.
Sleep deprivation from caring for a baby dramatically hindered recovery, leaving athletes more tired and physically drained.

Athletes often tried to train at pre-pregnancy volumes without adjusting for the massive increase in their daily cognitive and domestic workload, leading to poor physical responses to training.



Tactical adaptations: Smarter training

"I have had to cut out everything unnecessary from my training and focus on the quality of training instead of quantity. The postpartum rehabilitation strengthened my core stronger than it was before the birth. I have been able to continue training, reach my own level and develop even further from there, so I feel that my performance has improved."

"I have switched from very high volume training to more mindful and smart training."

"I have had to cut out everything unnecessary from my training and focus on the quality of training instead of quantity."

" I dedicated myself with greater consistency and mindfulness. I made significant progress."



Peak performance outliers

" I played for 5 more years after the birth. After I recovered from the birth and hormonal changes (breastfeeding etc.) I got back to even much better shape than pre-pregnancy."

"My performance has gone up because I train now better and compete on a higher level. My speed, conditioning and strength have all improved. "

"I did more strength training and was happier to do the sports, so my athletic performances were even better than before."

The constraints of load on recovery

"It was hard to understand and accept that my overall load due to life in general had increased dramatically and although I trained as much as I trained before my pregnancy, I didn't feel that the training worked or that I improved. I should have adjusted my training load to allow more time for recovery."

Breastfeeding

Scheduling and practice clashes

Maintaining a breastfeeding routine presented severe scheduling conflicts with rigid, pre-determined team practice times. A team sport player noted that her absolute priority was breastfeeding and respecting her son's schedules. However, this meant she had to interrupt her baby's sleep to drop him off at his grandparents' house before practices, which regularly caused her to arrive late to training.

One athlete explained that she attempted to return to training a year after giving birth but found it too difficult to combine evening workouts with her child's needs. She wrote: "I wanted to breastfeed for a long time and be with my child in the evenings at bedtime," leading her to step away from competitive sport.

Physiological recovery

Athletes highlighted breastfeeding as a distinct physiological phase that delayed their return to peak physical conditioning. An athlete noted that a true return to pre-pregnancy shape was only possible once she had fully recovered from both the physical birth and the subsequent "hormonal changes (breastfeeding etc.)".

Another mentioned that athletes planning a pregnancy desperately need peer support to warn them about practical physical realities they might not have anticipated, specifically highlighting "the effects of... breastfeeding and lack of sleep on training".

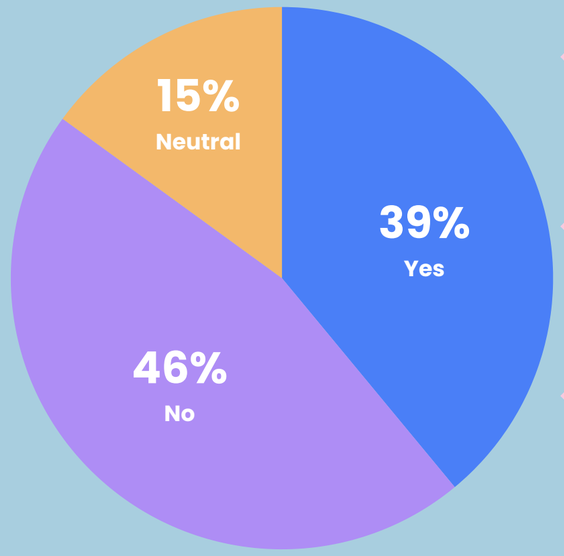
Logistical barriers

One athlete highlighted a highly restrictive law in their country that bans children under the age of three from entering certain venues. This created an obstacle in caring for her infant. Another athlete recounted a highly traumatic experience while traveling for a tournament in which her baby suffered an illness while breastfeeding. She reflected: "It felt like I was in the wrong place even then".

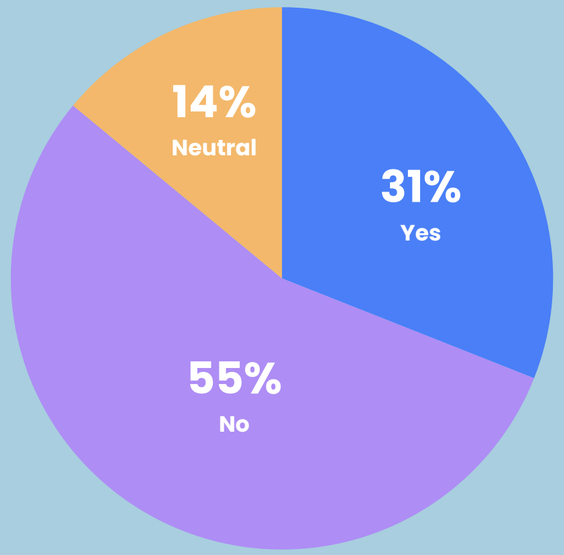
Support and information

Athletes specifically requested basic "information about breastfeeding" to help them manage their dual roles.

Breastfeeding negatively impacted my ability to train / compete

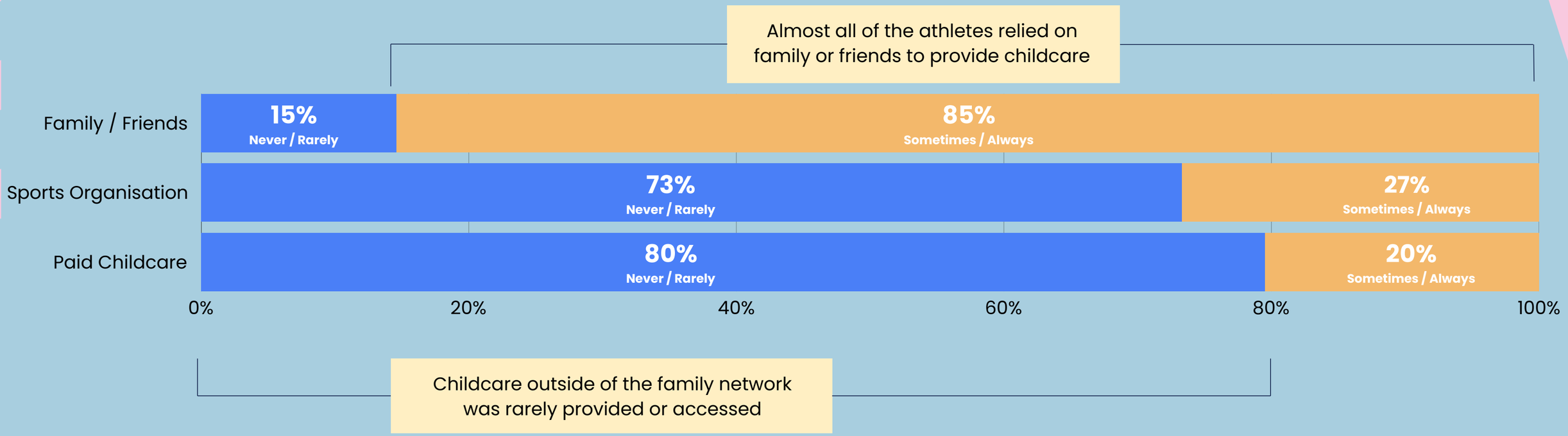


My organisation supports travel with a child



Childcare

What childcare is accessed by mother-athletes?



65% Felt that access to childcare was a barrier to training and competition

Mama

Mother-Athlete Identity

Changing sense of identity as a mother-athlete

Athletes in this study experienced highly diverse shifts in identity after becoming mothers, ranging from empowering self-growth to profound inner conflict. These changes in self-perception generally fell into several key themes

Identity expansion and coexistence

Many athletes rejected the idea that they had to choose between being an athlete or a mother. Instead, they described motherhood as an "expanding" or "completing" force that added a powerful new dimension to their existing identity.

One athlete noted, "My identity is expanding. I don't stop being an athlete, I become an athlete who shows that motherhood is compatible with championships". Others felt their identity became "more complete" because they could proudly combine both demanding roles. Competitors described a sense of pride in proving that these two worlds could exist together, finding a healthy separation where they could focus entirely on being an athlete on the field and immediately transition to being a mother off of it. For some, childbirth actually strengthened their athletic confidence, with one noting that having a child "strengthened my self-efficacy and athlete identity. No one can take either of them away".

Radical Re-alignment of Priorities

A nearly universal experience was a major shift in focus, where the child's needs naturally replaced personal athletic ambitions as the primary driver in life.

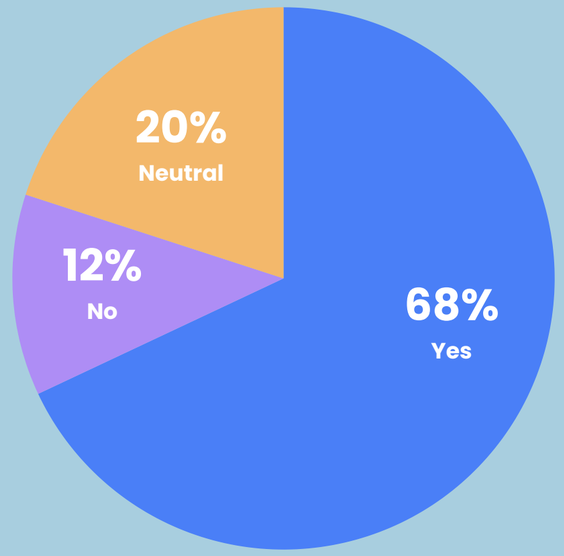
Athletes who previously let sports dictate every area of their life accepted that training and competition now had to happen strictly on the child's terms. While athletes still valued their sport, many acknowledged that they were now "primarily a mother" and that sport was no longer their single top priority.

76%

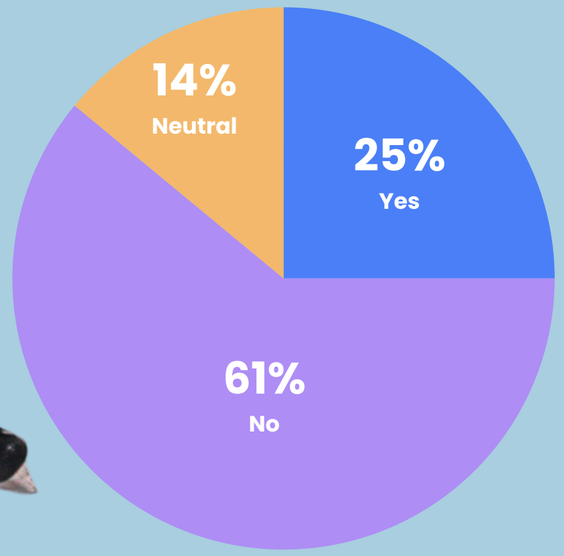
Of mother-athletes feel supported by their teammates and coaching staff



I feel able to combine my identity as an athlete and a mother



I feel judged for being a mother athlete



Mama

Mother-Athlete Identity

The drive to be a role model

Motherhood introduced a deep, external sense of purpose. Athletes were no longer performing just for themselves; they were highly motivated to inspire their children and other women.

One athlete noted that motherhood brought a "deeper sense of self" and a desire to showcase to her daughter "how women can be whatever we want, and how to do it in a healthy way". Competitors took the "role model effect very seriously," using their presence on the field to actively challenge societal stigmas and demonstrate to younger girls that a sports career does not have to end with a child.

Inner peace, grace and reduced pressure

Interestingly, motherhood provided some athletes with a healthy psychological detachment from their sports, which actually improved their mental well-being and approach to training.

Athletes reported becoming "more relaxed" and giving themselves more grace if they missed a workout or performed poorly, as their entire self-worth was no longer tied to sports. Several competitors noted they were mentally stronger because they no longer stressed about the sport "24/7," which allowed them to approach workouts with greater focus, maturity, and mindful efficiency.

Identity loss, disconnect and grief

Conversely, a substantial portion of the cohort struggled with a painful sense of fragmentation, feeling that motherhood had actively stripped away their athletic identity.

One team sport player shared her ongoing psychological battle noting she struggled to reconcile her athletic aspirations with her limited personal resources. Some felt the change was too drastic to be considered an expansion, stating that they felt they had a "completely different identity" that they were still trying to figure out years later. Others experienced identity damage because their clubs, teammates, or families wrote them off as "finished" once they became pregnant, making them feel like an "alien" in their own sport.

Changing identities of mother-athletes

"As a mother, you always carry worries with you. As an athlete, focused on your sport, you can let go of those worries and do what you are good at. I was proud to show that these two roles can coexist."

"I feel that my identity is now more complete, because I combine the role of a mother with that of an athlete."

"It remains challenging given societal norms that view a woman primarily as a mother. Personally, I never wanted to set limits for myself, and I believe that dreams and goals don't end just because you become a mother."

"Motherhood added a new identity to my life. I didn't feel that it invalidated what I built as an athlete; On the contrary, I felt that the experience of championship sports helped me to have discipline, endurance and composure in the role of a mother as well."

"My identity changed from an athlete to a mother. It's hard to combine both. Motherhood takes precedence over sports. It's hard to be a full athlete anymore, because the baby's needs take precedence over your own needs."

"I'm proud, especially when little girls see me as a mum on the court."

" I have struggled a bit with the fact that i still want to identify as the player that I was and am not anymore."

Mama

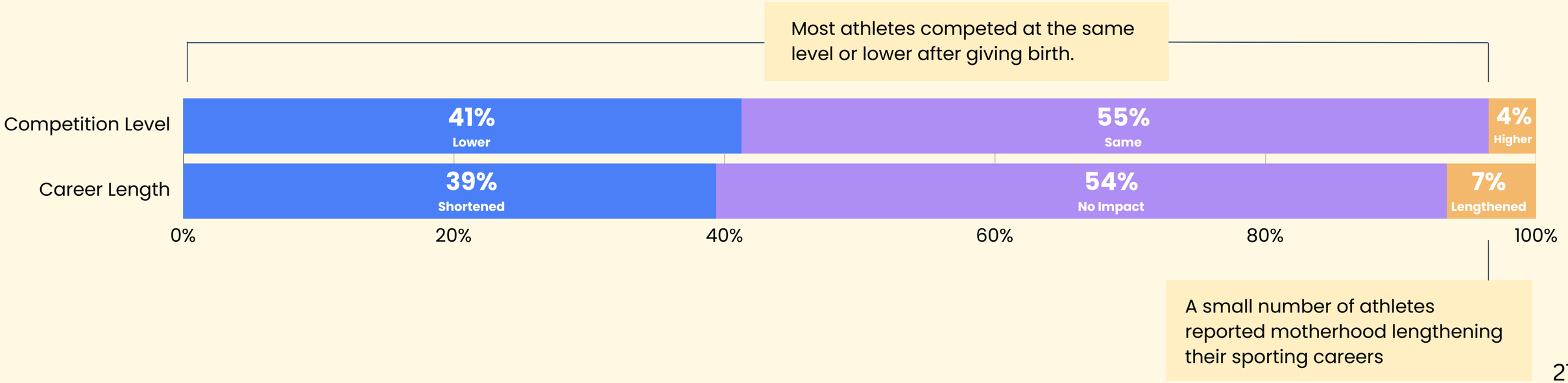
Career Trajectory

Were athletic career paths impacted by pregnancy?

Pregnancies had varied effects on the length of athletes' careers, with some athletes finding that it ended or shortened their competitive trajectory, while others felt it rejuvenated or extended their time in the sport.
For many, the pregnancy did not necessarily shorten the length of their involvement in sport but changed the nature of it. Several athletes transitioned from professional or "peak" status to a different level of participation, finding a new way to identify as an athlete while prioritising their family.



What impact did pregnancy have on competition level and length of career?



Career Trajectory

Careers that were shortened by motherhood

Factors that contributed to athletic careers being shortened by motherhood



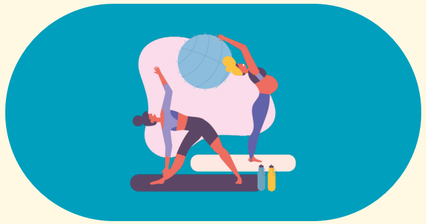
Lack of resources or childcare

Multiple athletes cited a lack of childcare or financial resources as the primary reason they did not return to their sport. One athlete noted that while she planned to return, she found it "not possible with my resources" once the baby arrived.

Shifting priorities

Some athletes felt their identity shifted so significantly toward motherhood that they no longer desired to compete at a high level. For example, one athlete stated, "Motherhood takes precedence over sports. It's hard to be a full athlete anymore" .





Team and social pressure

In some cases, negative team environments or being "written off" by coaches and federations discouraged athletes from continuing.

Career Trajectory

Careers that were lengthened by motherhood

Factors that contributed to athletic careers being lenghtened by motherhood

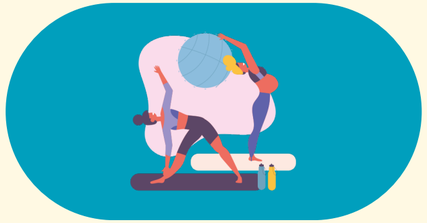


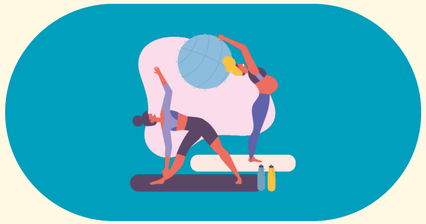
Mental strength and maturity

A common theme among those who returned was a newfound mental resilience. Athletes reported being "stronger both mentally and physically," having "less fear," and feeling more "purposeful" in their training.

Increased efficiency

Motherhood forced athletes to be more organized and focused. One athlete mentioned that she became "much more efficient" and valued her time more, which allowed her to train better even with less time.





Physical regeneration and recovery

Some used the pregnancy as a "long rehab" from previous injuries such as ACL tears, whilst others felt "regenerated" after the break from high-intensity competition.

Strategic timing for career cycles

Some athletes used pregnancy to bridge the gap between major milestones. For instance, one athlete chose to have a child after failing to qualify for the Olympics specifically so she could be "competitive again for the Olympics" four years later.



Mama

Maternity policies in sport

How do maternity policies influence mother-athletes

Maternity policies-and the systemic lack thereof-profoundly shape the personal, financial, and physical lives of mother-athletes, influencing everything from their financial survival to their physical safety and career longevity.

Financial security and contract vulnerability

The presence or absence of clear maternity pay policies directly dictates whether an athlete can afford to start a family without facing career-ending financial strain. In sports and regions lacking protective policies, athletes face severe financial penalties. For instance, basketball players have reported being left entirely unemployed for the season with no income after falling pregnant, or having their teams stop paying them immediately.

In some countries, standard public maternity systems are poorly adapted to professional sports. For example, one volleyball player noted that she only qualified for the minimum level of state maternity support because athletic results and prize money are not recognised as standard income.

Athletes strongly advocate for mandatory contract clauses that guarantee maternity leave, 12-month contract protections, and full salary registration so they are not left financially exposed. Where these conditions are regulated and met, athletes report a highly positive and secure experience.

29%

Said that their organisation supported their return to sport

79%

Said that they were not aware of any maternity policies supporting athletes in their sport.

6%

Said that policies influenced their decision to become pregnant

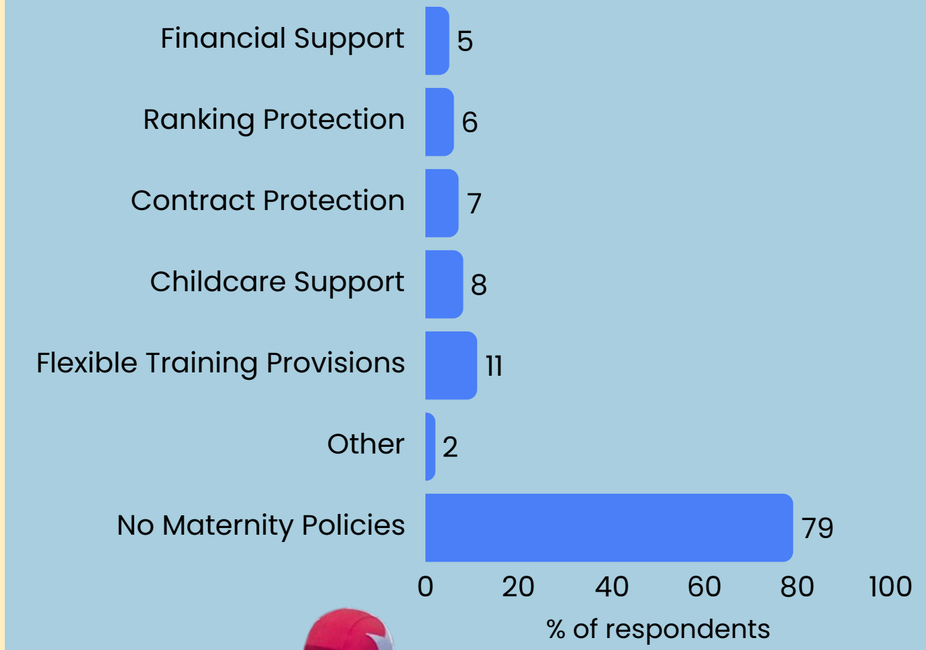
15%

Said that they felt protected from career loss during pregnancy

6%

Said that their sport had adequate maternity protections

What maternity policies are you aware of in your sport?





Maternity policies in sport

The pressure of premature postpartum return

When sports federations do not have policies to protect an athlete's rank or selection during maternity leave, it directly compromises their physical health. A lack of policies to "freeze" ranking points or selection status during pregnancy forces athletes to return to competition far too quickly. One elite volleyball player recalled returning prematurely out of sheer financial and competitive pressure to collect ranking points, which directly resulted in injury complications related to postpartum recovery.

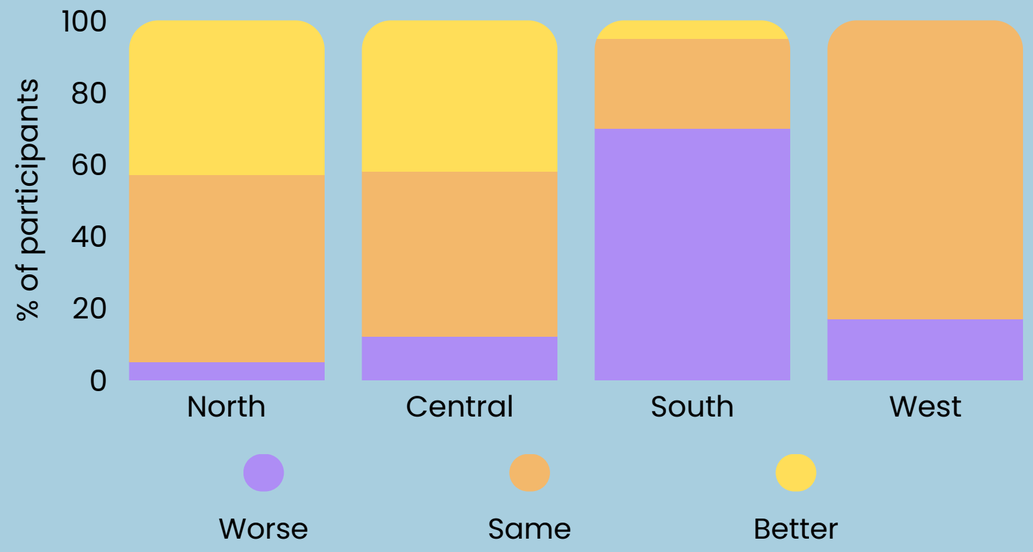
Athletes frequently request structured, gradual return-to-play protocols and specialised physical therapy to protect their bodies from the physical shock of returning to elite training too quickly.

Career protection and institutional recognition

Maternity policies influence whether a female athlete's career is treated as viable after pregnancy or if she is immediately written off. Without statutory guarantees that an athlete will not lose her position, squad selection, or funding, many athletes operate under the fear that pregnancy will end their careers.

Policy changes can create immediate positive shifts. An athlete highlighted that it was only after she gave birth that her sport's coaching squad criteria finally integrated considerations for parental leave. Prior to this policy change, there was almost zero recognition of mother-athletes, forcing them to find all training and recovery information entirely on their own.

Compared to other countries, the support that my country provides is:



Logistical support and facility policies

Beyond financial aid, standard administrative and facility policies dictate how practical everyday training is for a mother-athlete.

Athletes stress that true policy support must include practical, everyday solutions, such as on-site childcare, flexible training hours, and child-friendly travel accommodations during away games and competitions.

Part 2

Mama

Support Staff Experiences



SOCIAL INNOVATION SPORTS

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CSIT

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BELGRADE

Support Staff Interviews

Interviewees

The people interviewed in this study are sports professionals, medical practitioners, and administrators representing several European countries (Austria, Belgium, Cyprus, Greece, Finland, Portugal, Serbia, and Spain). They were interviewed regarding their experiences supporting female athletes through pregnancy, postpartum recovery, and ongoing motherhood. Some of these professionals bring a "dual perspective" to the project, having been high-level athletes and mothers themselves.

They can be broadly categorized into three professional profiles:
1. Coaches, Trainers, and Physical Educators
2. Medical and Physical Therapy Specialists
3. Sports Administrators, Directors, and Agents

Interview content

The interviews were conducted in a semi-structured manner in the participant's own language, before being translated to English for analysis. The interview questions concerned the participant's experiences in working with pregnant and postpartum athletes, exploring their knowledge, confidence, challenges and opinions on future needs in supporting athletes.



Example roles of interviewees in sport

Exercise Instructor

Physical Education Teacher

Pregnancy and Postpartum Exercise Specialist

Sports Coach

Sports Scientist

Physiotherapist

Researcher

Medical Doctor

Sports Development Professional

Federation Board Member

Psychological Consultant

Sports Agent

Sports Manager

Referee

Sports Club Director

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Support Staff Confidence

Low confidence without specialisation

Support staff, coaches, and sports administrators in this study exhibited a wide range of confidence levels when asked to support pregnant athletes. While some highly specialised or experienced individuals felt secure, the overwhelming majority expressed uncertainty, low confidence, and professional anxiety due to a lack of formal education and clear policies

Low to moderate confidence

Many general coaches, managers, and physical therapists admitted feeling out of their depth. A sports physiotherapist rated their confidence as "moderate at best," stating that pregnancy-specific physiology made him feel "out of his depth". Similarly, club directors and local coaches noted that their administrative confidence was low because they lacked specialised training and resources.





Low confidence in sport and physical performance staff

"I would rate my confidence as moderate at best. I am comfortable with general physical conditioning and rehabilitation, but when it comes to pregnancy-specific adaptations, postpartum physiology, or pelvic floor issues, I feel out of my depth. I know enough to know I don't know enough"

"At first, I felt uncertain because I had never received any formal education on this topic. We mainly relied on medical advice from the athlete's doctor and adjusted training intensity according to how she felt physically and emotionally. The biggest challenge was balancing safety with maintaining the athlete's confidence and connection to the team. "

"I have not had any specific training in this area, so my confidence and management come from my personal connection with the athlete. To compensate for the lack of specific medical guidelines on my end, we rely on technology by using biometric bands (like Whoop) that provide objective daily data on her fatigue, sleep quality, and stress, which helps us adjust her training load."



Low confidence in management and administration

"From an administrative perspective, I'm not confident enough. There is limited training for sports managers on this topic. Most clubs learn through experience rather than through formal education or policies. I received no training specifically related to maternity in sport. Most knowledge comes from practical experience and discussions within the club."

"As a director, I am not the direct support provider — I create the conditions for support. My confidence in doing that well is currently low, because we lack the knowledge, the policies, and the resources. I am willing to change that. Events and projects like this one are helping me understand what needs to be done."

Mama

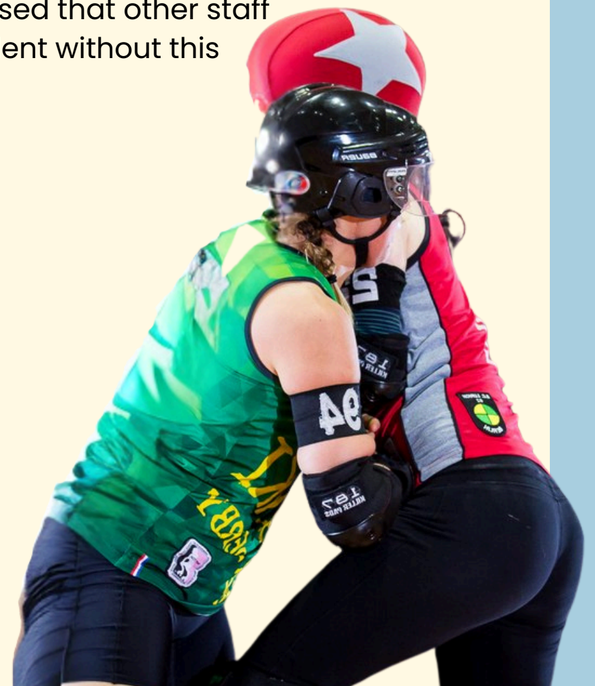
Support Staff Confidence

Experiential vs competent confidence

Several female coaches and teachers felt confident solely because they had navigated pregnancy and returned to competitive sports themselves. However, they cautioned that "experiential confidence is not the same as evidence-based competence" and acknowledged they were ultimately making subjective judgment calls.

High confidence through specialisation

Fully confident practitioners were rare and achieved their security strictly through privately funded postgraduate studies in female athlete health, pelvic floor rehabilitation, and prenatal exercise. They emphasised that other staff should not be expected to feel confident without this deliberate training.

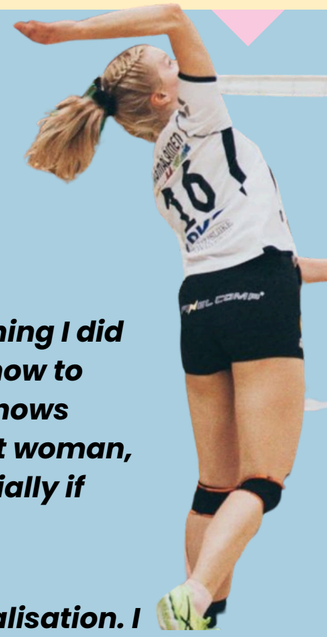


Experiential vs competent confidence

"I would feel confident because I'm a mother and ex-athlete as well."

"My confidence is grounded in experience — both my own and that of the athletes I have coached. But I am acutely aware that experiential confidence is not the same as evidence-based competence. I know enough to manage risk conservatively, refer when in doubt, and acknowledge what I do not know. In the absence of sport-specific guidelines, that is the best I can do - but it is not the standard we should accept."

High confidence through specialisation



" I want to be clear: that confidence comes from years of specific education, not from a general sports science background. Practitioners without that preparation should not be expected to feel confident, and the system should not expect them to improvise. That is one of my strongest advocacy messages."

"For example, beyond the course we had at university, in the training I did after they taught us about pregnancy: how to change positions, how to adjust resistance, etc. So an ordinary physiotherapist who only knows exercise, I think, cannot do it. If you're going to take on a pregnant woman, you should definitely read something before taking her on, especially if she's an athlete."

"Fully confident — but again, that is the result of deliberate specialisation. I have completed multiple advanced courses, attended international conferences, and kept up with the research literature in this field for over a decade. Confidence without that foundation would be dangerous."

Concerns of Sports Staff

Physical safety and fear of doing harm

The primary clinical concern was navigating safety limits without causing injury to the mother or the pregnancy. Staff worried about specific physical risks, such as fall risks and abdominal impact in contact sports, joint hypermobility and core strain. Practitioners also feared acute clinical issues. For example, one physical educator recalled causing her own placental detachment during pregnancy by misjudging "simple" exercise intensities, while others worried about compressing major arteries during supine (lying down) exercises after the fourth month.

Liability and the absence of guidelines

Because sports organizations rarely had formal protocols, staff faced uncomfortable liability concerns. Many practitioners had to improvise training loads based on "common sense" and intuition. This lack of evidence-based, sport-specific toolkits forced physical therapists to adopt highly conservative approaches or default clinical decisions upward to external obstetric teams to protect themselves and their clubs.

Underestimating the postpartum transition

Physiotherapists and coaches were highly concerned that returning athletes (and clubs) routinely underestimated the complex physical and mental toll of childbirth. They struggled to manage chronic sleep deprivation, hormonal fluctuations, and the physical discomfort of training with a nursing body.



Managing athlete identity and competitive pressure

Coaches struggled deeply to manage the psychological stress and identity crises experienced by pregnant athletes. Staff observed that elite athletes often experienced intense anxiety over losing their physical form, team role, or career funding. Coaches worried that the pressure of closing Olympic qualification windows or expiring contracts would drive athletes to push past safe physical boundaries and return to full-impact training prematurely.

Practical and logistical exclusion

Administrators and directors expressed concern over the total absence of physical infrastructure within clubs to support active mothers. This included a lack of childcare, no dedicated spaces at training grounds for breastfeeding or milk pumping, and zero club budget to facilitate travel with an infant during away fixtures.

Mama

Training and Education

Experiential vs competent confidence

Across the various European countries represented in the study, participants overwhelmingly agreed that pregnancy and female athlete health are severely neglected, and often entirely absent, from formal education studies (including sports science degrees, physical education programs, coaching licenses, and physical therapy qualifications).

Complete omission in coaching and PE degrees

Coaches and teachers highlighted a stark void in their formal licensing and university curriculums. One sports official recalled that when they first piloted a "gender module" in trainer education in the mid-2000s which covered menstruation and completely omitted the topic of pregnancy.

Coaches working with female athletes insisted that standard qualifications must move beyond basic training methodology to formally cover reproductive health, the menstrual cycle, pregnancy, and postpartum recovery. They noted that coaches need structured education to understand physical limits and avoid causing harm.

‘Niche’ status in physiotherapy and sports science

Even medical and rehabilitation specialists stated that their university degrees left them poorly prepared to handle active pregnant women.
A physical therapist pointed out that a standard physiotherapy degree provides very little contact with pregnant women. In some academic settings, pregnancy is taught only briefly under a general "special populations" module. A sports physiotherapist working in professional women's football noted that pregnancy-specific physiology was completely absent from his formal university training.

Specialists argued that female athlete physiology should not be treated as a post-graduate luxury or a niche elective. Instead, they advocated that it must be mandatory core curriculum in all sports science and physiotherapy degrees.

Pregnancy in formal education settings

“My undergraduate degree included very little on women's health.”

“There was no education for pregnancy in my formal physiotherapy training."

“My coaching licence did not include a single hour on female athlete health, pregnancy, or postpartum. My PE teaching degree was similarly silent on these topics.”

“At university, pregnancy is taught as a module that refers to a special population, just like, for example, older adults. So it has its own particularities. Certainly, an ordinary physiotherapist who doesn't know what pregnancy is like and how a woman's body changes cannot go and train a pregnant woman or a woman who has just given birth.”

Specialist training

”Everything I know in this area has come from postgraduate courses in female athlete health, pelvic floor rehabilitation, exercise during pregnancy, and return-to-sport science. I also completed research placements that gave me access to clinical expertise. It has been a significant personal investment.”

”I have invested heavily in specialised training.”

Mama

The Need For Change

Exhaustion and cognitive overload

Participants in the study identified several critical, interconnected areas where sports systems must evolve to support pregnant athletes and mother-athletes properly. Their recommendations span policy reform, financial infrastructure, education, and cultural changes.

Systemic and contractual policy reforms

A major concern was that athletic support currently relies on "informal goodwill" rather than structured systems. To address this, participants suggested a number of reforms.

Formal "Maternity Protocols": Creating standardized maternity protocols similar to how athletic injuries are handled. These protocols should guarantee continued financial support, contract protection, and world ranking protection.

Regulatory Requirements for Clubs: Making it a mandatory requirement by sports federations for any club with a women's section to have a documented policy supporting pregnant and postpartum athletes.

Contractual Protection: Rewriting professional contracts to eliminate "anti-pregnancy" clauses and legally protect athletes' pay and status during pregnancy and recovery.

Women in Leadership: Actively placing more women in sports staff and policymaking roles so that topics strongly related to women's health receive the institutional attention they deserve.

Financial and logistical support structures

Practical, everyday logistics often force women out of sports. Systemic improvements were highlighted.

Sustainable Childcare Funding: Providing state, federation, or sponsor funding to cover the high costs of childcare and travel caregivers during training and away competitions.

On-site Club Infrastructure: Establishing dedicated, private spaces at training grounds and sports venues for breastfeeding or milk pumping, alongside providing babysitters during sessions.

Strategic Re-allocation of Resources: Ensuring that elite athletes who want to return can retain their financial benefits, while also transparently planning resources for the athletes replacing them if they choose to retire.





Mama

The Need For Change

Intergrating maternal health into formal education

Practitioners currently feel unequipped because female reproductive health is treated as a niche specialty. Recommended changes were proposed.

Core Academic Modules: Making female athlete physiology, pregnancy, and postpartum recovery a mandatory core module in all sports science, PE teaching, and physiotherapy degrees.

Mandatory Coaching Licences: Integrating female-specific health modules into standard coaching certification curricula.

Evidence-Based Toolkits: Creating practical, sport-specific training guidelines and "usable toolkits" for coaches and physical trainers rather than relying on generic, overly restrictive obstetric advice.

Stopping "DIY" Research: Increasing university-backed workshops and seminars so that trainers do not have to rely on informal internet searches or personal anecdotes.

Psychological cultural shift

Participants argued that structural changes will fail without a fundamental shift in how athletic spaces view mothers.

Ending the "Culture of Silence": Stopping the normalisation of motherhood as a "weakness" or the definitive "end of a career," and instead openly communicating and validating mother-athletes.

Treating the Athlete as a Whole Person: Moving away from a "gladiator-like" environment focused solely on immediate physical performance to a "human-centric" model of sport.

Specialised Psychological Support: Integrating professional sports psychologists into club structures to help athletes navigate identity transitions, guilt, anxiety, and postpartum depression.

Engaging Partners and Family: Fostering societal awareness so that partners actively share childcare duties, allowing women the freedom to dedicate time to their physical and mental health.



Mama

In conclusion

The experiences collected paint a clear picture of a profound systemic support gap in women's sports. While mother-athletes routinely demonstrate extraordinary physical resilience and psychological growth, the surrounding sports ecosystem continues to treat pregnancy as an unexpected "interruption," a legal liability, or a private inconvenience rather than a natural, predictable phase of a female athlete's career.
To bridge the gap for athletes planning pregnancy and navigating motherhood, the data reveals four critical areas of missing provision:

Evidence-Based, Sport-Specific Training Guidelines
Currently, pregnant and postpartum athletes are met with vague, overly conservative medical warnings or outright training "prohibitions" from general healthcare practitioners. Because sports medicine lacks clear, standardized protocols for high-intensity or contact training during pregnancy, athletes are left to make risky, unguided decisions or resort to self-conducted online research and personal trial-and-error.

Formal Practitioner and Coaching Education
Maternity care, pelvic floor health, and female-specific sports science are completely absent from core physical education degrees, physical therapy qualifications, and coaching licenses. As a result, club physiotherapists and sports coaches acknowledge they feel technically unequipped and legally anxious, forcing them to rely on subjective intuition or reactive improvisation to support their players.

Institutional and Contractual Protections
Athletes planning pregnancies operate in a state of high contractual and financial vulnerability. Many professional sports contracts still feature active "anti-pregnancy" clauses, and athletes routinely face the immediate loss of club salaries, national federation funding, and accumulated world ranking points upon falling pregnant. Systematic policies that legally guarantee contract protections, ranking point freezes, and maternity pay are largely non-existent.

Logistical Infrastructure and Funding
Once athletes return postpartum, they face a stark lack of physical and financial infrastructure. Sports organizations rarely provide dedicated travel funding for caregivers, breastfeeding/pumping spaces at training grounds, or on-site childcare options, forcing mother-athletes to manage and finance these heavy logistical burdens entirely out-of-pocket

Mama

In conclusion

Ultimately, what is missing from sports systems is not the athlete's capacity to return to elite play, but a **coordinated, multidisciplinary framework of care**. Until sports federations establish **formal maternity protocols that mirror injury-rehabilitation systems** and provide **equality of access for mother-athletes**, the successful integration of motherhood and competitive sport will remain a matter of individual luck and personal wealth, rather than a standard professional right.



Mama

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