



Ramadan Guidance for Schools and Educational Settings:

PHYSICAL EDUCATION AND PHYSICAL ACTIVITY

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In association with:

The Muslim Council of Britain
The Association for Physical Education
The Youth Sport Trust
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Contents

Introduction		2
Section 1:	Ramadan – context	3
Section 2:	The physical activity of children and educational settings	6
Section 3:	What does / does not break the fast?	8
Section 4:	Guidelines for schools during Ramadan: supporting the fasting PE student and staff member	9
Section 4.1:	Supporting the fasting student	9
Section 4.2:	Supporting the fasting PE teacher	13
Section 5:	Misconceptions concerning physical activity during Ramadan	14
Acknowledg	ements	15
References		16

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Introduction

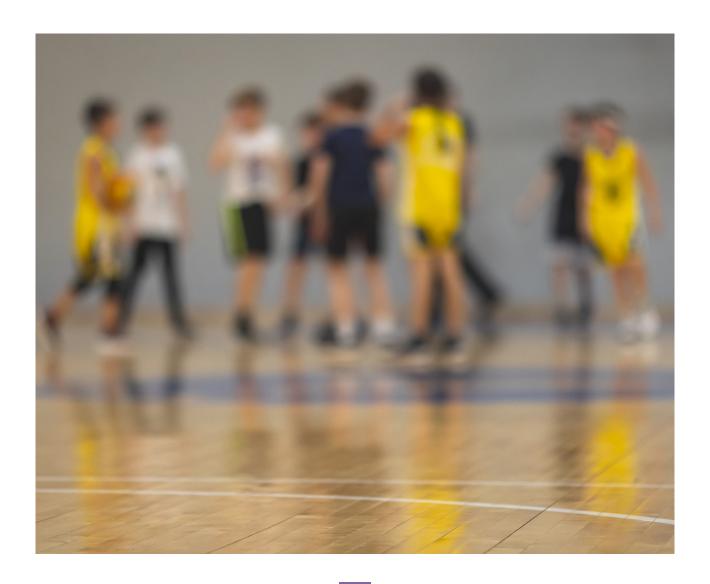
This position paper presents guidance to schools and wider educational establishments on how to accommodate and support the fasting student, and fasting Physical Education (PE) teacher. Section 1 provides the context with an explanation of Ramadan, and the practical implications of Muslims' experience. This also includes key definitions of events which take place throughout Ramadan, and an infographic outlining the 33-year Ramadan cycle.

Section 2 provides an outline of the current situation of children's physical activity and the role schools and educational settings play in delivering PE.

Section 3 provides guidance on what does / does not break the fast.

Section 4 offers guidelines for schools on how they can support the fasting student and staff throughout Ramadan, including an infographic acronym summarising the key guidelines.

Section 5 addresses misconceptions of physical activity during Ramadan, and provides guidance for staff on the Islamic stance on physical activity during Ramadan.



1. Ramadan – Context

The word Ramadan means 'the hot month' in Arabic and is the ninth month of the Islamic calendar (Gnojewski, 2004). Ramadan is a month-long (29-30 days) Islamic celebration of fasting and prayer in honour of Allah, which means God in Arabic, and follows the lunar calendar (Gnojewski, 2004, Ferguson, 2021). Throughout this holy month, Muslims gather with their families and communities, and fast from dawn to sunset and recite the Quran (Ferguson, 2021).

The Quran states: "Believers, fasting has been prescribed for you just as it was prescribed for those before you so that you may become God conscious." (Quran 2:183). However, dispensations are granted on account of youth (prepubertal), menstruation, pregnancy, breast feeding, long distance travel, medical conditions, or old age (Ferguson, 2021, Rashed, 1992). It is acknowledged that the age at which children begin fasting is at the parents' discretion, and this may differ from family to family, however, generally speaking, those who have entered pubertal state are encouraged to fast. Furthermore, some parents may wish for prepubertal children to complete half-day fasts, during which children fast up until lunchtime.

Fasting is a prescribed number of days. But whoever amongst you is ill or on a journey, then (let them fast) an equal number of days (after Ramadan to make them up). For those who can only fast with extreme difficulty, compensation can be made by feeding a needy person (for every day not fasted). But whoever volunteers to give more, it is better for them. And to fast is better for you, if only you knew (Quran 2:184).

Ramadan is the month in which the Quran was revealed as a guide for humanity with clear proofs of guidance and the decisive authority. So, whoever is present this month, let them fast. But whoever is ill or on a journey, then (let them fast) an equal number of days (after Ramadan). Allah intends ease for you, not hardship, so that you may complete the prescribed period and proclaim the greatness of God for guiding you, and perhaps you will be grateful (Quran 2:185).

Fasting is one of the five pillars of Islam, and a key objective of fasting is to work towards an increase in 'taqwa' (pronounced taq-waa – meaning closeness to God).

Ramadan also encourages Muslims to engender a sense of gratitude, self-discipline, and self-improvement, at both an individual and community level, which is encouraged throughout the year. Fasting encourages Muslims to feel an affinity with the poor across the world who have little or no food to eat (Muslim Council of Britain, 2023).

The breaking of fast meal (iftar) at sunset encourages families and local communities to share their meal together. The Prophet Muhammad (peace be upon him) encouraged sharing of iftar (breaking of the fast meals). There are many mosques that organise 'open-iftar' events to which people of all backgrounds are welcome. Muslims are encouraged to share their food with friends, family and neighbours, and to reach out to those who may be fasting alone, to share their Ramadan experiences (Muslim Council of Britain, 2023).

Besides the fasting component of Ramadan, charity work in local communities typically increases—in a similar nature to the Christian observance of Lent—and Muslims increase in spiritual devotional acts such as prayer and strengthening family ties (Muslim Council of Britain, 2023). It is a time of reflection, and fasting throughout this holy month helps Muslims learn to be patient and grateful, and reminds them to help people who are in need (Ferguson, 2021, Hasan, 2023). It is important to note, that despite Muslims engaging in the fasting component of Ramadan, fasting also plays an important role in other major world religions, and is a key feature in all of the Abrahamic faiths, which include Judaism and Christianity. Therefore, the considerations and guidance of this document can be extended to include and accommodate the wider fasting populations.

The daily routine for the fasting Muslim during Ramadan is as follows:

- i. 'Suhur' (pronounced Su-hoor) the meal taken just before dawn, which marks the beginning of the fast.
- ii. 'Iftar' (pronounced If-taar) the meal eaten at sunset to break the fast.
- iii. 'Tarawih' (pronounced Taraaweeh) a night prayer which is prayed every night during the month of Ramadan. The prayers are lengthier than normal prayers, with large portions of the Quran recited aloud.

Other key components of Ramadan include:

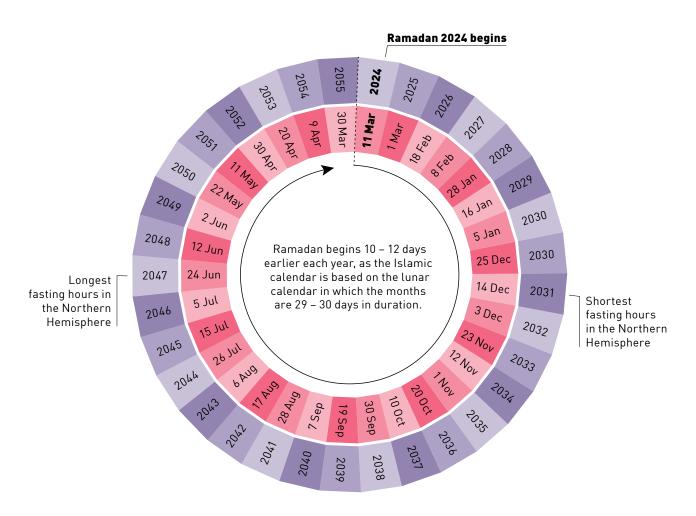
- i. 'Itikaf' (pronounced Eetikaaf) an act of worship where a person will stay at a mosque for a certain number of days and nights devoting oneself to worshipping Allah, generally done during the last ten days of Ramadan.
- ii. 'Zakat al-Fitr' or 'Sadaqat al-Fitr' (pronounced Zakaatul-fitr or Sadaqatul-fitr)
 a charitable contribution made by all Muslims of all ages who can afford to do so days before the 'Id (Eid) prayer is offered, so that the poor can also celebrate.
- iii. 'Id al-Fitr (pronounced Eedul-fitr) the festival for Muslims at the end of the month of Ramadan, and is the first day of the following month of the Islamic calendar.

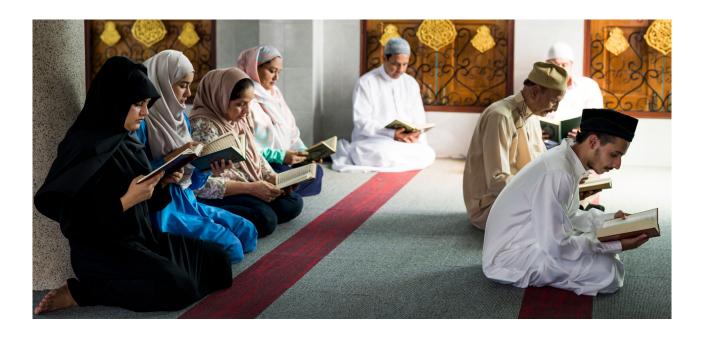
(Muslim Council of Britain, 2023)



The 33-year Ramadan Cycle beginning 2024

It takes 33 years for the lunar month of Ramadan to circle through the solar year.





2. The physical activity of children and educational settings

Globally, there are inequalities in levels of physical activity between women and men, girls and boys, old and young, and the socioeconomically advantaged and disadvantaged – this is unfair and unjust (World Health Organisation, 2022).

In the school PE and sport sector, inclusive practice has been discussed and implemented with regards to ability, gender, and type of activity. However, Ramadan is something that has never been brought into the conversation, and this sector cannot be fully inclusive without discussing Ramadan and its impact on physical activity (PA).

PA guidelines for children and young people (5 – 18 years) advise participation in moderate to vigorous intensity PA (MVPA) for an average of at least 60 minutes per day (Chief Medical Officers, 2019), with 30 minutes of MVPA being accumulated at school (HM Government, 2016). However, only 47.2% of UK children and young people meet the 60-minute MVPA guidelines (50% males, 45% females) (Sport England, 2022). Furthermore, on a global scale only 19% of children globally are estimated to be sufficiently active (World Health Organisation, 2022).

Specifically in England, physical inactivity directly contributes to one in six adult deaths (Lee et al, 2012, Sport England, 2022), and cardiovascular disease (CVD) is the number one adult killer in the UK (Townsend et al, 2012). Regular childhood PA reduces the onset of such non-communicable diseases, (Andersen et al, 2011, Hills et al, 2011, World Health Organisation, 2022, Sport England, 2022), whilst also providing numerous other health benefits (Biddle and Asare, 2011, Janssen and Leblanc, 2010, World Health Organisation, 2022).

Five key benefits of children engaging in 60 minutes of daily MVPA have been outlined (Chief Medical Officers, 2019, Hartmann et al, 2010, Specker et al, 2004):

- i. improve cardiovascular health,
- ii. maintain a healthy weight,
- iii. improve bone health,
- iv. improve self-confidence,
- v. and develop new social skills

PA promotes improved cognitive abilities and positive mental health, with the greatest effects having been found in relation to increased self-confidence, lower levels of depression (Sterdt et al, 2013), and also in the development of new social skills (Department of Health, 2011). Current literature also indicates a positive association between levels of sport and PA and levels of loneliness, with active children often less likely to feel lonely when compared with less active children (Sport England, 2022).

Additionally, the association between positive attitudes (as an indicator of physical literacy) and activity levels reinforces the importance of supporting all children and young people in accessing the best possible experience of being active (Sport England, 2022).

The health risks of a sedentary and inactive lifestyle for children are also undeniably clear, and this is particularly important as children's PA behaviours and habits established in childhood track through to adolescence (Khodaverdi and Stodden, 2016). Physical inactivity is found to have detrimental effects on young people's cognitive function and academic achievement (Singh et al, 2012, Burkhalter and Hillman, 2011, Hillman et al, 2008, Sport England, 2022). Areas such as the West Midlands have the highest amounts of sedentary behaviour (SB) in England (Sport England, 2022).

Transition between childhood and adolescence has been identified as a key area of interest when monitoring PA. Research suggests that MVPA drops on average 7% per year between the ages of 9 and 15 years, so that by the age of 15 years the majority of young people no longer meet the recommended daily amount of activity (Nader et al., 2008, Dumith et al, 2011). In addition to this, the PA decline is steeper among young people from disadvantaged or low-income communities (Borraccino et al, 2009). The 9 – 15 years age range is critical in promoting positive PA behaviours, as PA instilled at a younger age can track into adulthood, which may have health benefits (Nader et al, 2008, Dumith et al, 2011).

Children's habitual activities such as playing outdoors, active travel (i.e., walking and cycling for transport) provide opportunities for PA throughout the day (Loprinzi et al, 2012). Current literature indicates that a decrease in children's independent mobility may be accountable for declining amounts of children's PA (Schoeppe et al, 2014). Independent mobility describes the freedom to play outdoors and travel to places without adult supervision (Schoeppe et al, 2014). In addition to this, increased complexity in families' daily schedules, and longer travel distances to schools, shops, and recreational facilities have also been associated with reduced rates of children's independent PA (Bringolf-Isler et al, 2008, McDonald et al, 2010). As a result of poorer levels of children's independent mobility, a growing number of PA interventions targeting children have been implemented (Lubans et al, 2011, Singh et al, 2009).

Educational settings provide a safe and supportive environment with policies and practices supporting healthy behaviours (Centers for Disease Control and Prevention, 2011). Moreover, educational settings provide opportunities for children to both learn about and practice healthy eating, and PA behaviours (Centers for Disease Control and Prevention, 2011, Ferreira et al, 2006). Each setting's PA policy is identified as being a key factor in encouraging children's PA (Ferreira et al, 2006), and is often informed by government funding guidance: e.g. the School 'PE and Sport Premium'. This funding is a 'protected' budget that schools allocate for Physical Education (PE) and sporting opportunities (Department for Education, 2014).

PE lessons have been identified as the formal opportunity in schools for the direct delivery of health education (Harris, 2020), and setting positive attitudes towards fitness (Fairclough et al., 2016). PE is therefore viewed as the primary vehicle for promoting health outcomes in schools (Harris, 2020), and every child has a right to access high quality PE and school sport. The after-school time period has been identified as being a key window for the accumulation of children's PA (Harris, 2020). It is suggested that schools with the best PE provision enabled pupils to achieve well by providing a range of extra-curricular activities (Ofsted, 2013).

3. What does / does not break the fast?

Within educational settings, students may feel distressed if they break their fast unintentionally, or feel nervous/anxious about general activities which they perceive as possibly breaking their fast—especially swimming (see below). This may also be the case for fasting staff.

When an 'agent of consequence' reaches the throat, stomach, intestines, or a cavity that has a path—immediately or via another cavity—to any of these three areas and settles therein, the fast is broken. An agent of consequence is one that has nutritional or medical benefit or has been introduced by oneself. Thus, this includes:

- i. eating or drinking intentionally;
- ii. swallowing any amount of water whilst swimming, even accidentally;
- iii. oral and nasal medication including inhalers, nebulisers, nasogastric intubation and bronchoalveolar lavage (Special dispensation may be obtained for those who suffer from severe asthma.);
- iv. smoking;
- v. the administration of rectal suppositories, and
- vi. food/medication administered via gastrostomy or jejunostomy.

The following guidelines explicitly state what does not break the fast:

- i. injections (intravenous, intramuscular, intracardiac, intraosseous, intradermal, and subcutaneous)—including Covid-19 vaccines.
- ii. blood samples taken (thumb-prick or intravenous).
- iii. eye or ear drops (unless the tympanic membrane is perforated).
- iv. vaginal pessaries, urethral infusions, hormone replacement therapy patches, transdermal patches (e.g. nicotine patches, though this is seen as going against the spirit of fasting which is meant to test the individual), concentrated oxygen, epidural analgesia and haemodialysis.
- v. eating and drinking as a result of forgetfulness.

4. Guidelines for schools during Ramadan: Supporting the fasting PE student and staff

Students and staff are encouraged to engage in PE, PA, and school sport throughout Ramadan. However, the new timings of meals before dawn and after sunset and adjustment to new sleeping and eating patterns may increase fatigue levels. This section will provide guidelines and considerations for schools on how to accommodate the fasting PE student and support fasting staff members.

4.1 Supporting the fasting student

Intentional breaking of the fast: there may be some emergency situations when it may become necessary to encourage the fasting student to break their fast. It would be appropriate for the teacher to consult their parents (if necessary) to inform them as to why such a step is being suggested and obtain support/agreement. For example, if a student feels faint due to dehydration and there is a concern for their wellbeing, then the right course of action would be to encourage them to terminate the fast. They can be reassured and reminded that they could make up for that day at a later date after Ramadan.

The fasting PE student may feel more comfortable engaging in PE, PA, and school sport when teachers adopt a sympathetic approach in delivery. It is important to note, however, that fasting students may not appreciate being the focus of increased attention, so it is advised that teachers exercise professional judgement, as some students may not wish to be treated any differently. It is advised to consult the students in this case, and engage in open, transparent conversations whereby the students can advise on what type of support they may find helpful. Furthermore, staff may wish to consult the student voice in curriculum design, with a focus on choice of activities during the Ramadan period.

Staff may notice that fasting students become easily dehydrated—particularly during longer, warmer months—which can lead to tiredness, headaches, and a reduction in focus/concentration. Therefore, reminders from staff pre- or post-session, encouraging students to stay hydrated when not fasting in preparation for the longer, warmer fasting days is a simple—yet effective—approach. Staff may also wish to encourage students to eat high energy, slow energy release foods for 'suhur' (meal taken just before dawn) to help them remain energised throughout the day. This not only demonstrates a knowledgeable approach to fasting, but also links in with the nutritional topics covered within the PE syllabus and wider school curriculum, especially at key stage 4/GCSE level.

Whilst planning activity types within PE and the wider school extra-curricular programme, staff should consider the impact of reduced energy levels and increased risk of dehydration on performance. Staff may wish to reschedule extracurricular programme activities to earlier periods in the day, when students have increased energy levels (e.g. before school, break time, etc.). It is also advised that staff consider teaching more accommodating activities: i.e. reduced-endurance activities, or activities which are high-intensity or involve greater levels of energy expenditure. Therefore, levels of physical demand within sessions should be adjusted to accommodate individual needs.

The 'high risk' nature of certain PE activities should also be reviewed when teaching the fasting PE student. Fasting students may wish to carry out their own personal risk assessment of activities in which they partake, and therefore be able to adjust their own activity levels/effort accordingly. Activities such as gymnastics, swimming, and trampolining each have a focus on technique on an individual level, and any associated risks can be reduced by students carrying out personal risk assessments. Therefore, it is advised that if these activities are to be taught, sufficient support mechanisms (e.g. reduced physical intensities and additional staff support) be put in place (see below), and also that, where practical, staff be encouraged to shadow fasting students discreetly to enable increased responsiveness to potential dangerous situations.

Physical activity and support mechanisms for the fasting student:

Trampolining

- Increased number of spotters.
- Adapt bounce routines accordingly (e.g. reduce 10 bounce routine to 6 bounce routine).

Swimming

The fasting swimming teacher:

- Reduce poolside teaching.
- Allow rest breaks in cooler environments.
- Inform lifeguards of staff who are fasting.
- Liaise with lifeguards to increase staff shadowing.

The fasting swimming student:

- Increase water-based teaching.
- Reduce poolside teaching.
- Avoid submerging the face in the water.
- Encourage students to work on strokes/skills which do not include face submersion (e.g. back stroke, leg specific taught activities).
- Inform lifeguards when a group includes students/staff who are fasting.
- Liaise with lifeguards to increase staff and student shadowing.

Gymnastics

- Use of manual/mechanical guidance where appropriate.
- Reduced intensity activities/sharing workloads (e.g. balance, partner/group work).

Athletics

- Lower intensity activity selection.
- Students to take on a coaching/strategic role for higher intensity activities.
- Technical coaching roles for high-risk activities such as javelin, discuss, shot putt, high jump, etc.

Invasion Games

- Reduction in intensity levels.
- Increased strategic rest breaks.
- Coaching/performance analysis role for fasting students.
- Reduced number of players within teams, with increased rotation of substitute players.

Striking and Fielding

- Reduced time spent on high intensity game play.
- Greater focus on technical aspects.
- Increased use of students in officiating roles.
- Increased rotation of students in different positions (e.g. fielding, bowling, batting, etc).

Ramadan follows the lunar calendar, and therefore it is important to remember the exact start and end date of Ramadan will change annually. This can lead to seasonal differences when fasting, with the greatest fasting duration being in the warmer, longer, summer months, and the lowest fasting duration being in the colder, shorter, winter months.

This in turn results in different physiological effects on the human body, with the warmer climate associated with increasing the onset of dehydration sooner, and the winter climate associated with reduced body temperature.

In addition to the review process of PA during Ramadan, these seasonal differences should also be considered throughout the planning process. A whole-school approach to timetabling PE throughout the year may be a useful method in planning PE activities where adaptations are kept to a minimum, and attention is not drawn towards fasting students (e.g. lower intensity PA planned for all students throughout Ramadan).

The fasting student experience is an area which educators may wish to explore. In addition to increased fatigue and dehydration, and reduction in concentration levels, students may also experience heightened levels of anxiety during these times.

Staff should re-familiarise themselves with students who have medical conditions before Ramadan begins. Fasting students may benefit from having a quiet 'reflection room', which students can visit in times of anxiousness, and/or a designated member of staff who a student feels comfortable talking to.

It is also advised that educational settings accommodate the needs of students who feel the need to break their fasts unexpectedly (e.g. for students feeling unwell, educational settings could provide extra emergency catering supplies, or an emergency lunch box). It would also be helpful to provide those fasting, allocated time and a space to break their fast, particularly during winter months where sunset falls within the school day.

It has also been observed that non-Muslim PE staff (and other non-Muslim staff) have engaged in some or all the fasts to truly gain an insight into the fasting student experience. This is not only to share in the feelings associated with fasting during Ramadan, but also a mechanism of support to the fasting student.

Review - Have you reviewed you curriculum plan? Consider when Ramadan falls in the academic year.

Accommodate - How have you accommodated your fasting students?

Modify your activities to make everyone feel included and comfortable.

Aware - Are you aware of who is fasting? Are you aware of their daily routines?

Develop your practice. Have you updated your teaching practice to accommodate students needs?

Ask - Check in with your fasting students. How are they feeling today?

Network - inter-school collaboration. Share what Ramadan is, and how it should be considered a reason to adapt the PE curriculum plan.

4.2 Supporting the fasting PE teacher

Schools and wider educational establishments should also accommodate the fasting PE teacher, and other fasting staff. It is anticipated that fasting staff will be more familiar with their routine, and how to manage their workload throughout Ramadan.

At this point, it is important to reinforce that Ramadan encourages Muslims to engage with daily life as normal, without creating extra demands or requirements. However, schools are encouraged to adopt a pragmatic approach to support fasting staff.

The physical demands of teaching PE are associated with higher levels of energy expenditure, and greater exposure to the outdoor environment when compared with non-PE staff. Therefore, schools may wish to consider staff who are fasting, and consult them when designing both the PE curriculum and the extra-curricular programme. Staff may wish to continue as part of their normal teaching routine, but it is advised that heads of department and headteachers be aware of the workloads of fasting PE teachers, and help to create a manageable workload for staff.

The nature of fasting when teaching PE inevitably will lead to staff having reduced energy and concentration levels, and consequently this may result in fasting staff engaging in less social conversation, simply to conserve energy. On the other hand, some fasting staff may enjoy extra company during social periods, to help pass time and forget about any 'struggles' they may be enduring. Schools are encouraged to be mindful of the differences in approach of fasting staff to social periods.

Additionally, fasting staff may use social periods to visit a designated quiet reflection room. Practically, staff may be more comfortable if this is separate from a student reflection room, and, where possible, schools should try and accommodate this.

Additional methods of support can include maximising the use of support staff within schools. Teaching assistants, technicians, and school subject monitors (amongst others) should be consulted and considered during the planning and delivery of sessions.

The dehydration levels associated with fasting can often mean that the fasting PE teacher may struggle with screen concentration, which may be the use of a laptop, computer, or smart whiteboard/projector. Therefore, colleagues within the school may wish to encourage fasting staff to take rest breaks away from screens, particularly during social periods.

Finally, colleagues may wish to familiarise themselves with the timing of sunset. This may fall within working hours, which could be during teaching time, extracurricular activities, or during staff meetings. Fasting staff should be excused to briefly break their fast before returning to their work commitments.

5. Misconceptions regarding Physical Activity during Ramadan

Shari'ah (Islamic law) indicates there is no directive saying that Muslims cannot be physically active during Ramadan. There is no evidence to suggest that fasting is harmful to the health of those who are healthy with no pre-existing conditions, providing there are adequate levels of hydration during non-fasting hours (Muslim Council of Britain. 2023).

Additionally, scientific studies (Rahman, 2022) have shown that fasting provides several health benefits, and forms of intermittent fasting have been incorporated into several diet regimes (Muslim Council of Britain, 2023).

Within a school context, students should be reassured that activities have been tailored to accommodate all, and that staff have considered fasting students in PE, PA and school sport. Schools, therefore, are advised to adapt activities inclusively. Staff should also engage in conversation with students, showcasing knowledge and understanding of what Ramadan entails, and provide a platform through which students can suggest and access support mechanisms they find useful.



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References

ANDERSEN, L. B., BUGGE, A., DENCKER, M., EIBERG, S. & EL-NAAMAN, B. 2011. The association between physical activity, physical fitness and development of metabolic disorders. Int J Pediatr Obes, 6 Suppl 1, 29-34.

BIDDLE, S. J. & ASARE, M. 2011. Physical activity and mental health in children and adolescents: a review of reviews. Br J Sports Med, 45, 886-95.

BORRACCINO, A., LEMMA, P., IANNOTTI, R. J., ZAMBON, A., DALMASSO, P., LAZZERI, G., GIACCHI, M. & CAVALLO, F. 2009. Socioeconomic effects on meeting physical activity guidelines: comparisons among 32 countries. Med Sci Sports Exerc, 41, 749–56.

BRINGOLF-ISLER, B., GRIZE, L., MADER, U., RUCH, N., SENNHAUSER, F. H., BRAUN-FAHRLANDER, C. & TEAM, S. 2008. Personal and environmental factors associated with active commuting to school in Switzerland. Prev Med, 46, 67-73.

BURKHALTER, T. M. & HILLMAN, C. H. 2011. A narrative review of physical activity, nutrition, and obesity to cognition and scholastic performance across the human lifespan. Adv Nutr, 2, 201-6.

CENTERS FOR DISEASE CONTROL AND PREVENTION 2011. School health guidelines to promote healthy eating and physical activity. MMWR Recomm Rep, 60, 1-76.

CHIEF MEDICAL OFFICERS 2019. UK Chief Medical Officers' Physical Activity Guidelines, London, UK, Department of Health.

DEPARTMENT FOR EDUCATION 2014. PE and sport premium for primary schools. In: EDUCATION, D. F. (ed.).

DUMITH, S. C., GIGANTE, D. P., DOMINGUES, M. R. & KOHL, H. W., 3RD 2011. Physical activity change during adolescence: a systematic review and a pooled analysis. Int J Epidemiol, 40, 685-98.

FAIRCLOUGH, S. J., MCGRANE, B., SANDERS, G., TAYLOR, S., OWEN, M. & CURRY, W. 2016. A non-equivalent group pilot trial of a school-based physical activity and fitness intervention for 10-11 year old english children: born to move. BMC Public Health, 16, 861.

FERGUSON, M. 2021. Ramadan and Eid Al-Fitr, Capstone.

FERREIRA, I., VAN DER HORST, K., WENDEL-VOS, W., KREMERS, S., VAN LENTHE, F. J. & BRUG, J. 2006. Environmental correlates of physical activity in youth - a review and update. Obesity Reviews, 8, 129-154.

References

GNOJEWSKI, C. 2004. Ramadan: A Muslim Time of Fasting, Prayer, and Celebration, Enslow Publishers.

HARRIS, J. 2020. Health Position Paper. Association for Physical Education

HARTMANN, T., ZAHNER, L., PUHSE, U., PUDER, J. J. & KRIEMLER, S. 2010. Effects of a school-based physical activity program on physical and psychosocial quality of life in elementary school children: a cluster-randomized trial. Pediatr Exerc Sci, 22, 511-22.

HASAN, R. 2023. Ramadan: Additional Information about Ramadan and the Laws that Govern Its Fasting, Amazon Digital Services LLC - Kdp.

HILLMAN, C. H., ERICKSON, K. I. & KRAMER, A. F. 2008. Be smart, exercise your heart: exercise effects on brain and cognition. Nat Rev Neurosci, 9, 58-65.

HILLS, A. P., ANDERSEN, L. B. & BYRNE, N. M. 2011. Physical activity and obesity in children. British Journal of Sports Medicine, 45, 866-870.

HM GOVERNMENT 2016. Childhood Obesity: A Plan for Action.

JANSSEN, I. & LEBLANC, A. G. 2010. Systematic review of the health benefits of physical activity and fitness in school-aged children and youth. Int J Behav Nutr Phys Act, 7.

KHODAVERDI, Z. & STODDEN, D. F. 2016. Associations between physical activity and health-related physical fitness across childhood. Research Quarterly for Exercise and Sport Supplement, 87, A80.

LEE, I. M., SHIROMA, E. J. & LOBELO, F. 2012. Effect of physical inactivity on major non-communicable diseases worldwide: an analysis of burden of disease and life expectancy. Lancet., 380.

LOPRINZI, P. D., CARDINAL, B. J., LOPRINZI, K. L. & LEE, H. 2012. Benefits and environmental determinants of physical activity in children and adolescents. Obes Facts, 5, 597-610.

LUBANS, D. R., MORGAN, P. J., AGUIAR, E. J. & CALLISTER, R. 2011. Randomized controlled trial of the Physical Activity Leaders (PALs) program for adolescent boys from disadvantaged secondary schools. Prev Med, 52, 239-46.

MCDONALD, N. C., DEAKIN, E. & AALBORG, A. E. 2010. Influence of the social environment on children's school travel. Prev Med, 50 Suppl 1, S65-8.

References

MUSLIM COUNCIL OF BRITAIN 2023. Ramadan Guide.

NADER, P. R., BRADLEY, R. H., HOUTS, R. M., MCRITCHIE, S. L. & O'BRIEN, M. 2008. Moderate-to-vigorous physical activity from ages 9 to 15 years. JAMA, 300, 295-305.

OFSTED 2013. Outstanding Physical Education for all.

RAHMAN, S. 2022. Ramadan Fasting and its Health Benefits: What's New? Open Access Macedonian Journal of Medical Sciences, 10, 1329-1342.

RASHED, A. H. 1992. The fast of Ramadan. BMJ: British Medical Journal, 304, 521.

SCHOEPPE, S., DUNCAN, M. J., BADLAND, H. M., OLIVER, M. & BROWNE, M. 2014. Associations between children's independent mobility and physical activity. BMC Public Health, 14, 91.

SINGH, A., UIJTDEWILLIGEN, L., TWISK, J. W., VAN MECHELEN, W. & CHINAPAW, M. J. 2012. Physical activity and performance at school: a systematic review of the literature including a methodological quality assessment. Arch Pediatr Adolesc Med, 166, 49-55.

SINGH, A. S., CHIN, A. P. M. J., BRUG, J. & VAN MECHELEN, W. 2009. Dutch obesity intervention in teenagers: effectiveness of a school-based program on body composition and behavior. Arch Pediatr Adolesc Med, 163, 309-17.

SPECKER, B., BINKLEY, T. & FAHRENWALD, N. 2004. Increased periosteal circumference remains present 12 months after an exercise intervention in preschool children. Bone, 35, 1383-8.

SPORT ENGLAND 2022. Active Lives Children and Young People Survey UK, Sport England.

STERDT, E., LIERSCH, S. & WALTER, U. 2013. Correlates of physical activity of children and adolescents: A systematic review of reviews. Health Education Journal, 73, 72-89.

TOWNSEND, N., WICKRAMASINGHE, K., BHATNAGAR, P., SMOLINA, K., NICHOLS, M., LEAL, J., LUENGO-FERNANDEZ, R. & RAYNER, M. 2012. Coronary Heart Disease Statistics, 2012 edition. British Heart Foundation.

WORLD HEALTH ORGANISATION 2022. Global status report on physical activity 2022, Geneva, Switzerland, World Health Organisation.

