



Biobanding Festival Data Dashboard

Scottish FA

April 2026



1 Festival Summary

1.1 Biobanding Festival/Fixtures

The **Biobanding Festival** is a key talent identification and player development initiative organised by the Scottish FA (in partnership with CAS).

Players are grouped not purely by chronological age, but by **biological maturity** (Bio Age) and physical development indicators such as **PAH%** (Predicted Adult Height percentage). This helps create more equitable and developmentally appropriate competition, reducing the bias that often favours relatively older or more physically mature players within the same age band.

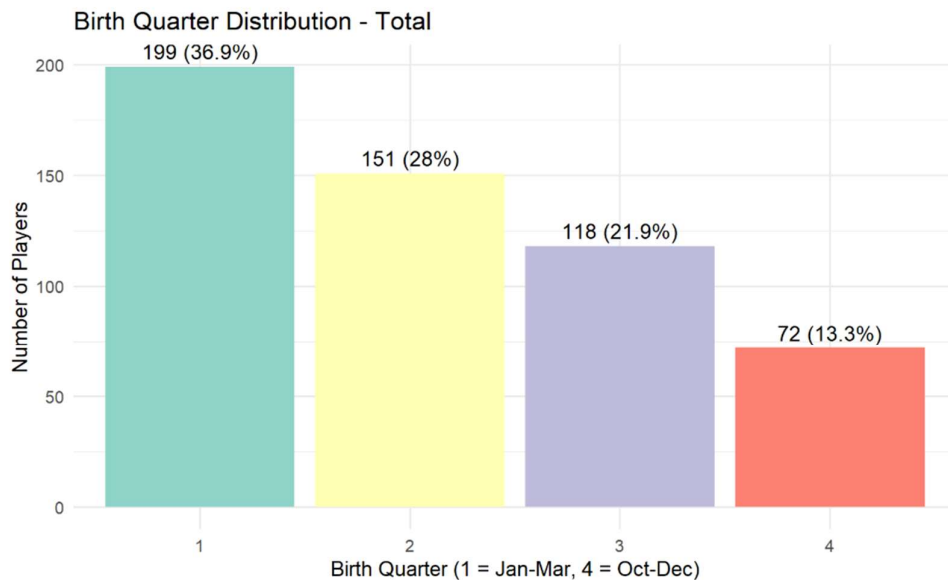
This report analyses key maturation and performance metrics (Birth Quarter distribution, Timing classification, Bio Age, and PAH%) across all participating players and clubs for the selected fixture date(s).

Purpose: To support coaches, academy staff, and the Scottish FA in making more informed, maturity-informed decisions around player selection, grouping, and long-term development pathways.

1.2 Relative Age Effect (RAEs)

The **Relative Age Effect (RAE)** is the well-documented phenomenon where children born earlier in the selection year have significant physical, cognitive, and social advantages over their relatively younger peers in the same age group. In football, this often results in over-representation of players born in the first half of the year (Q1 and Q2) in academy and representative teams.

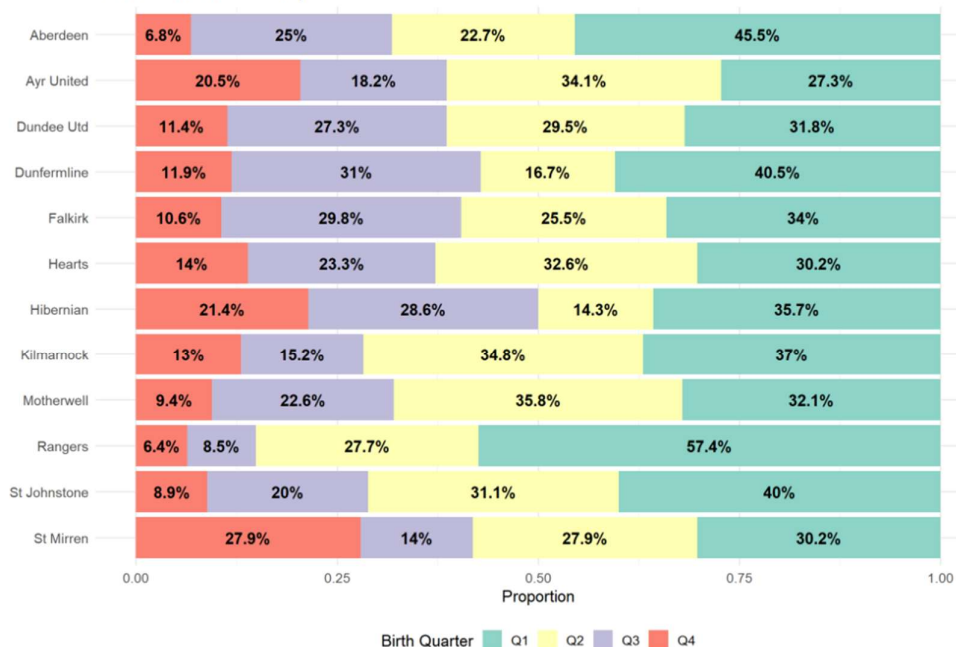
This report highlights birth quarter distributions and uses **Bio Age** and **PAH%** data to help identify and reduce the impact of RAEs through more developmentally appropriate player grouping.



Birth Quarter Distribution - Percentages

Birth Quarter	Count	Percentage (%)
1	199	36.9
2	151	28.0
3	118	21.9
4	72	13.3

Birth Quarter Proportions by Club
Shows relative over/under-representation



1.4 Maturity Timing Distribution

Maturity Timing Distribution

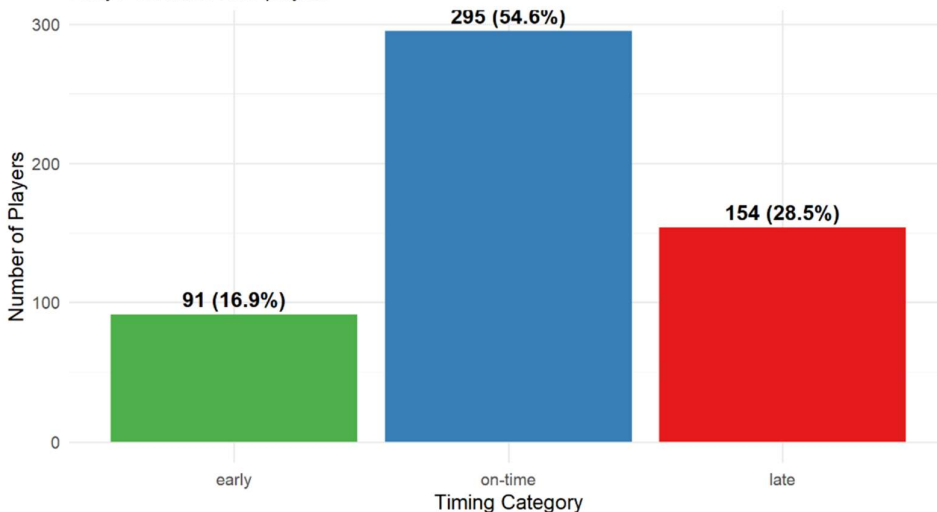
This section shows how players are classified by their biological maturation status (Early, On-time, or Late maturers) based on their Bio Age relative to their chronological age.

- The top chart displays the **overall distribution** across all selected fixtures.
- The bottom chart breaks this down by club, showing the **proportion** of Early, On-time, and Late maturers in each squad.

Understanding these timing classifications helps coaches and academy staff identify maturation imbalances and better support individual player development pathways.

Timing Distribution - Total

Early / On-time / Late players

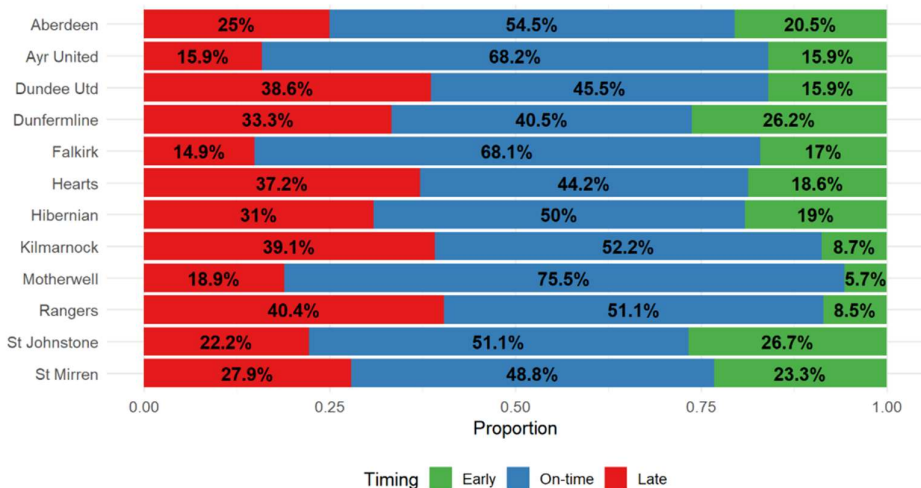


Timing Distribution - Count and Percentage (Overall)

Timing	Count	Percentage (%)
early	91	16.9
on-time	295	54.6
late	154	28.5

Timing Proportions by Club

Early / On-time / Late distribution per club



1.6 PAH% Distribution by Group

PAH% Distribution by Group

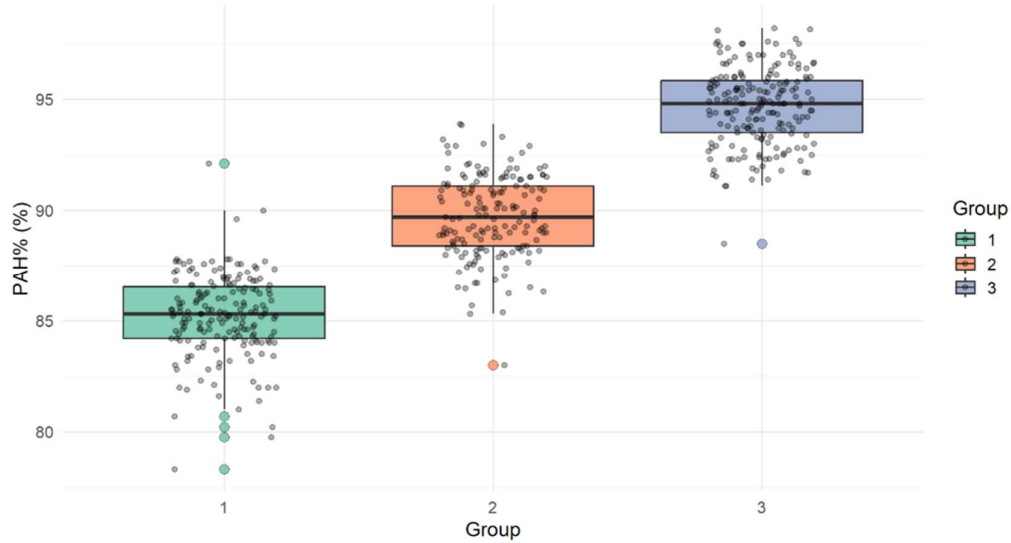
These visuals show the distribution of Predicted Adult Height percentage (PAH%) across the different playing groups.

The boxplot illustrates the spread, median values, and any outliers for each group, with individual player points overlaid for detail. The accompanying table summarises the minimum, maximum, mean PAH%, and player count per group.

PAH% is a key indicator of physical maturation – higher percentages indicate players who are closer to their predicted adult height and are therefore relatively more mature at the time of the festival.

PAH% Distribution by Group

Boxplot + individual players



PAH% Summary Statistics by Group

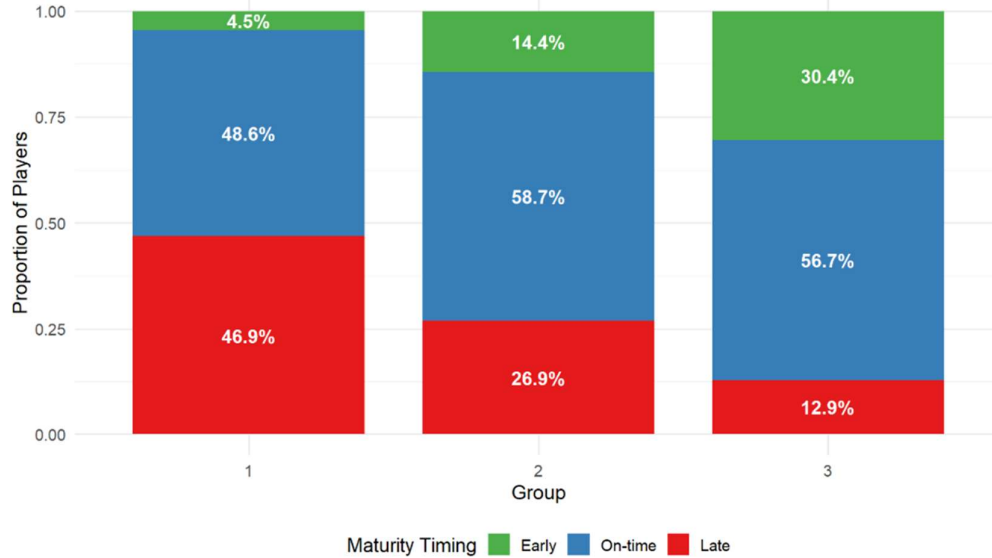
group	Min PAH%	Max PAH%	Mean	Count
1	78.3	92.1	85.2	179
2	83.0	93.9	89.7	167
3	88.5	98.2	94.7	194

1.7 Maturity Timing Distribution by Group

This chart shows the proportion of Early, On-time, and Late maturers within each playing Group. A higher proportion of "Late" maturers in a group indicates that the group contains many biologically younger players, while a high "Early" proportion suggests more physically advanced players.

Maturity Timing Distribution by Group

Proportion of Early, On-time, and Late maturers within each playing group



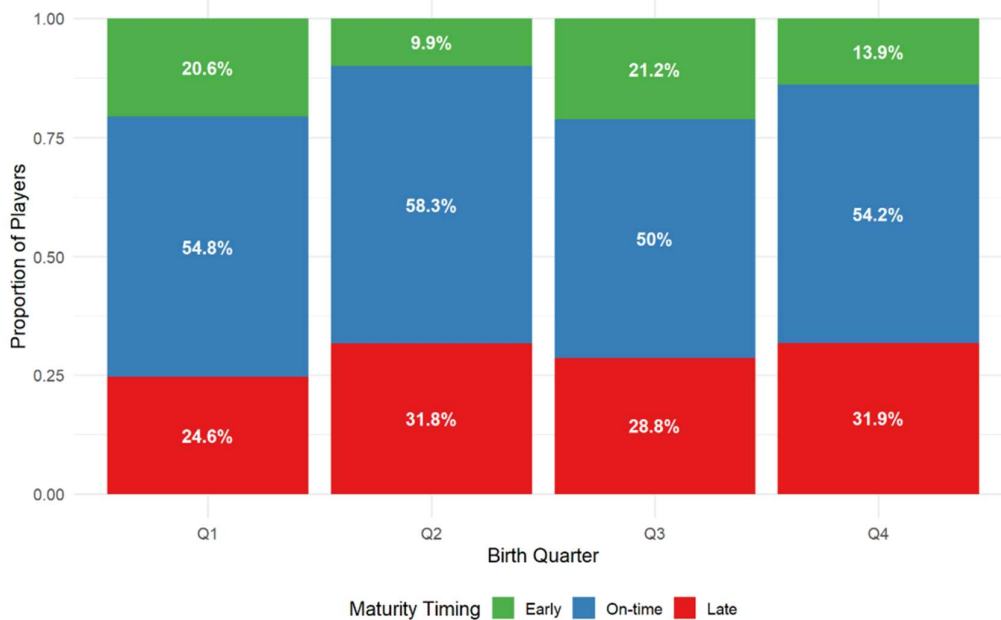
Groups with a high proportion of Late maturers contain many biologically younger players who may be at a temporary physical disadvantage but often have high long-term potential. Conversely, groups with many Early maturers are more physically advanced on average. This information supports more informed squad selection, training load management, and player development decisions.

1.8 Timing vs Birth Quarter

This analysis explores the relationship between birth quarter and biological maturation timing.

Maturity Timing Distribution by Birth Quarter

Proportion of Early, On-time, and Late maturers within each birth quarter



1.9 Maturity Timing by Group and Club

This chart shows the proportion of Early, On-time, and Late maturers within each playing group, broken down by club.

Maturity Timing Breakdown by Playing Group and Club
Proportion of Early / On-time / Late maturers

