



Instituut voor
Sportaccommodaties

Players' experiences of artificial turf

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Instituut voor
Sportaccommodaties

ISA Sport (1)

- Independent institute, under control of NOC*NSF (established in 1959)
- Location: National Sports Centre Papendal
- Three departments: Research, Consultancy and Testing



Instituut voor
Sportaccommodaties



ISA Sport (2)

- Number of staff: 40
- Accredited by many national and international sport organisations
- Certified by Lloyd's for ISO 9001:2000





Instituut voor
Sportaccommodaties

Mission ISA Sport

We provide high-quality expertise for the realization and preservation of qualitative good, long-lasting and safe sports facilities



Players' experiences of synthetic turf

- Project in order of the Royal Netherlands Football Association (KNVB)
- Financial support:
 - Ministry of Sport
 - Members of the National Standardisation Committee for Artificial Turf



Aim of the study

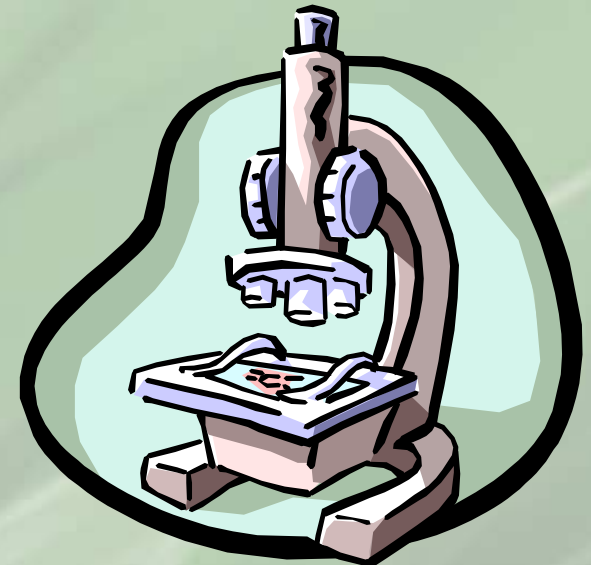
To provide a basis for policy decisions of KNVB for artificial turf in the Netherlands:

which teams should be or should not be allowed to play on artificial turf?



The research

- Took place at six approved facilities all over the Netherlands (new type of artificial turf)
- Interview in person 800 football players of various abilities (60 questions)
- Technical quality
- During the season 2001/2002

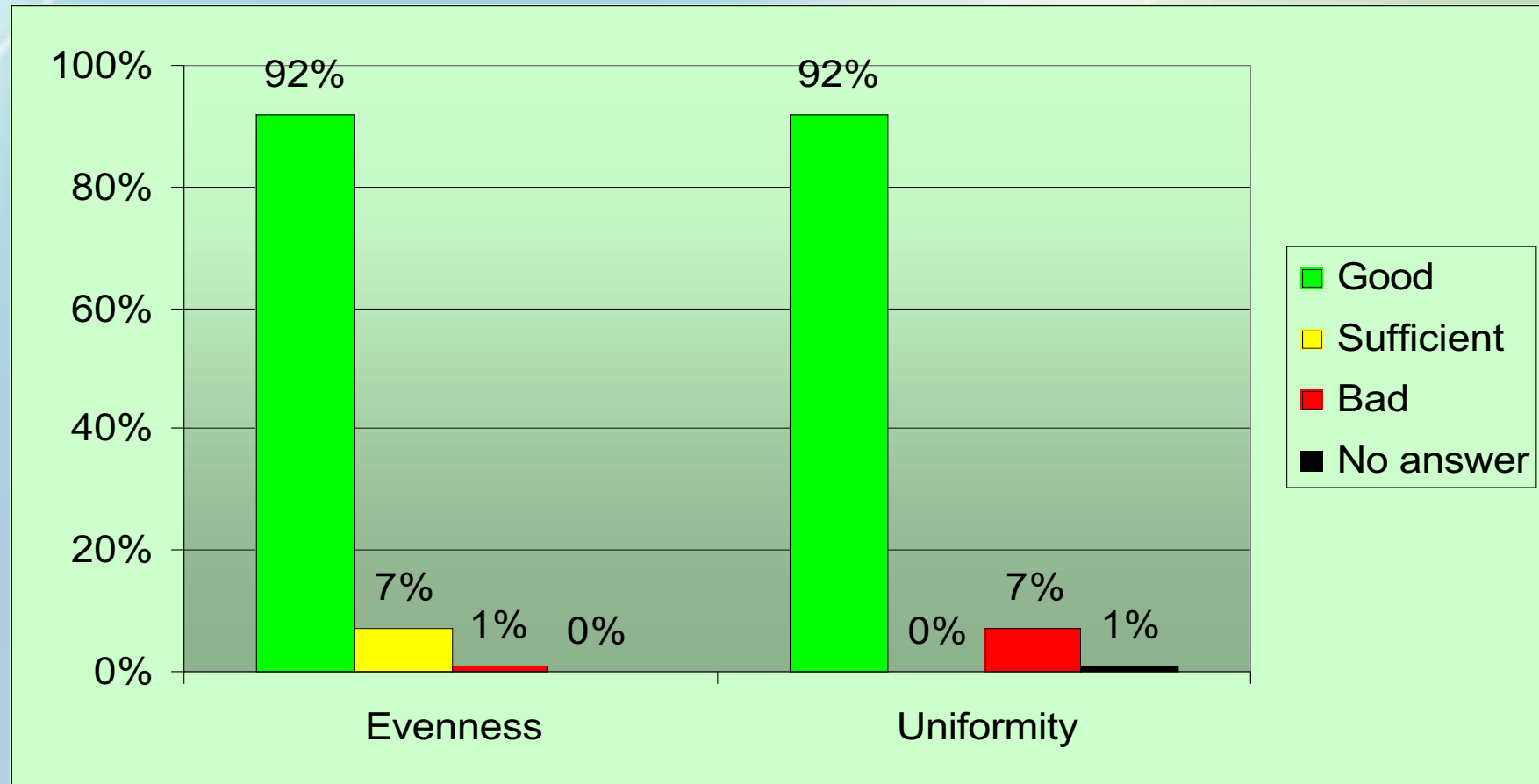


Results interview

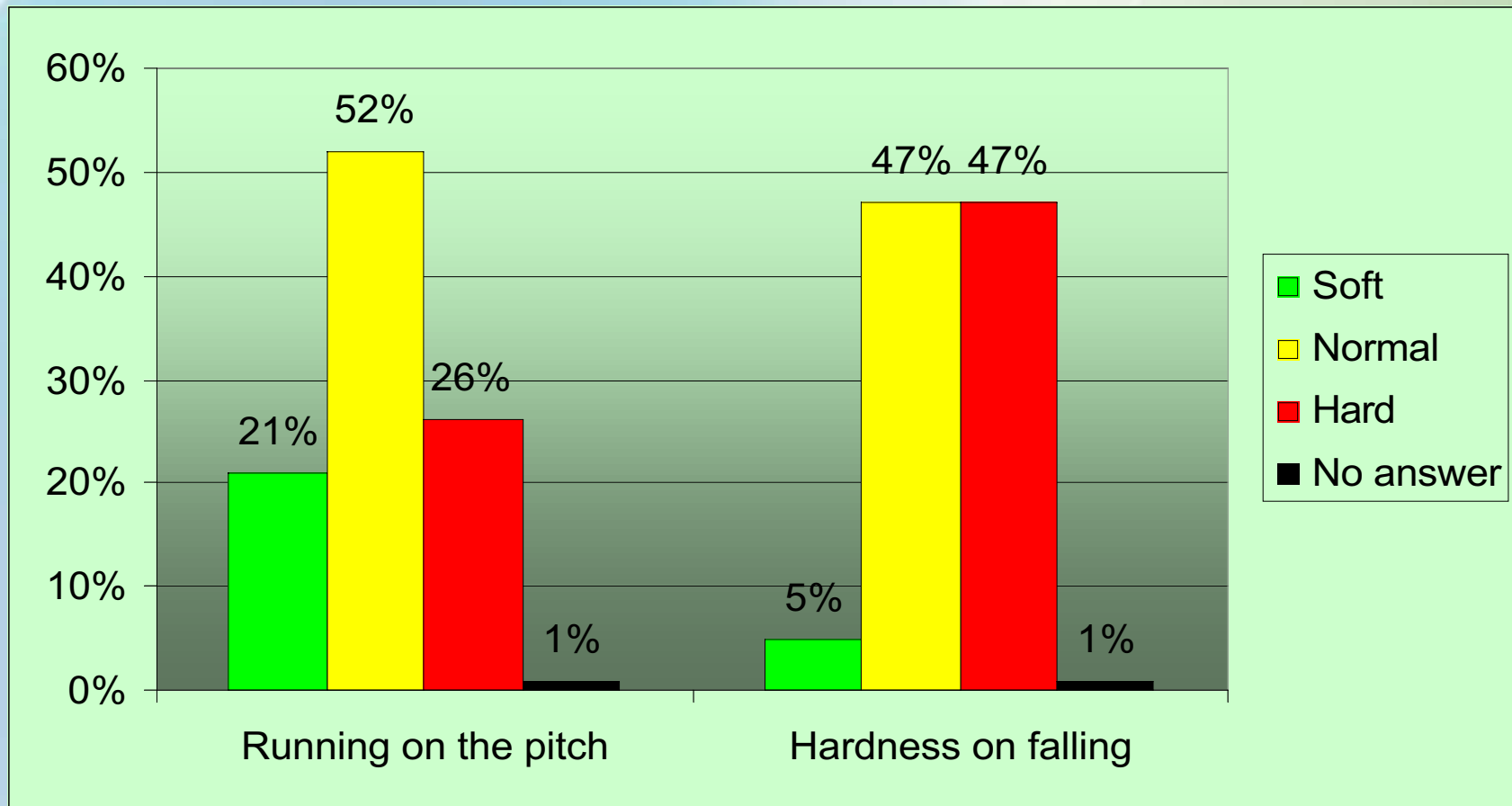
- Properties
- Assessment of the friction and grip
- Assessment of the contact with the ball
- Ball behaviour
- Artificial turf versus natural turf



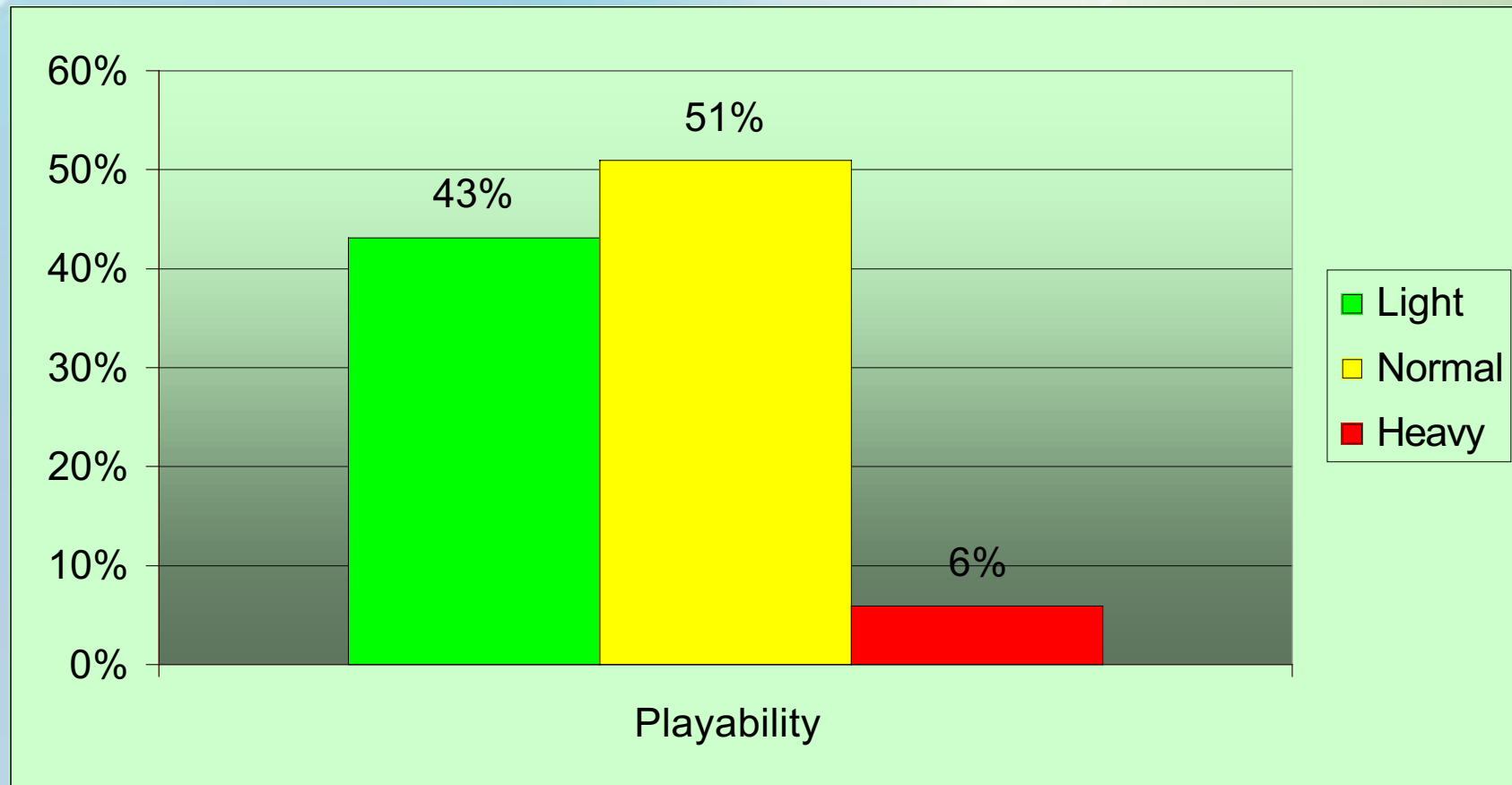
Properties (1)



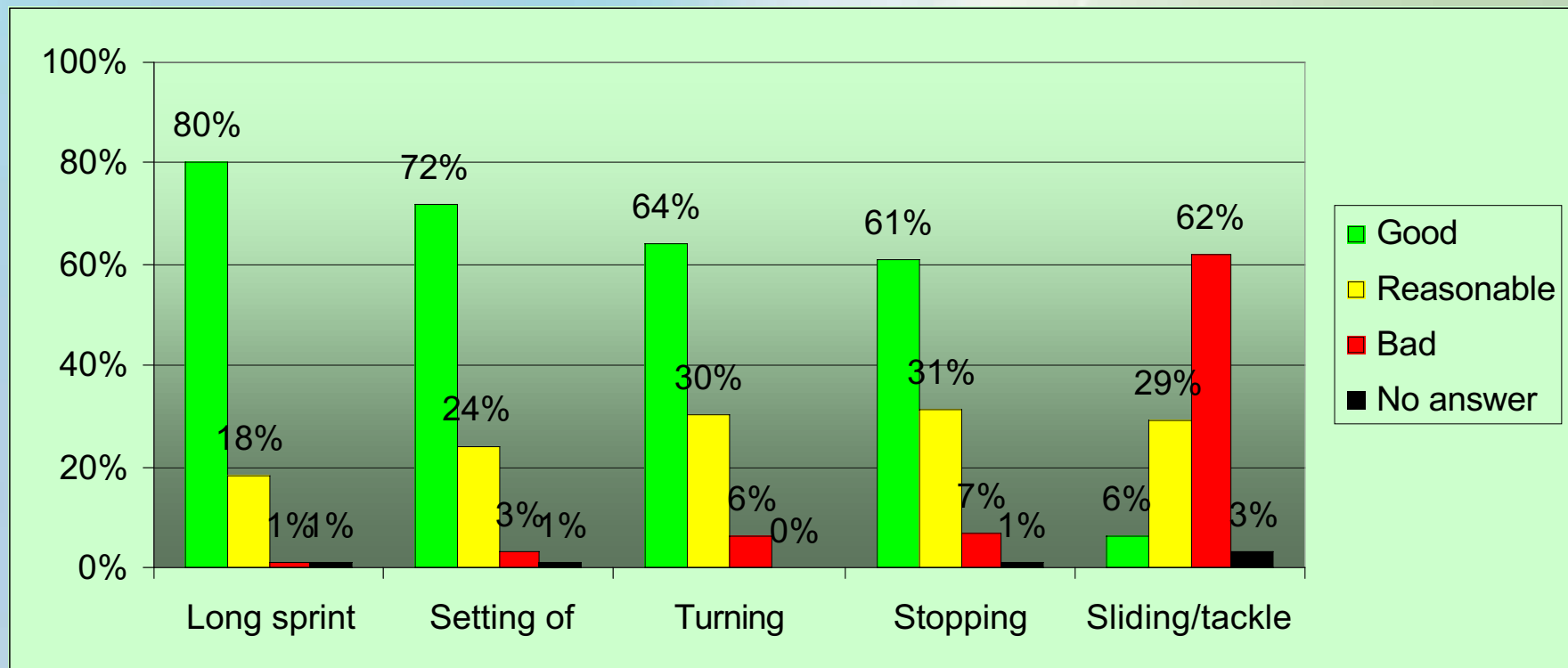
Properties (2)



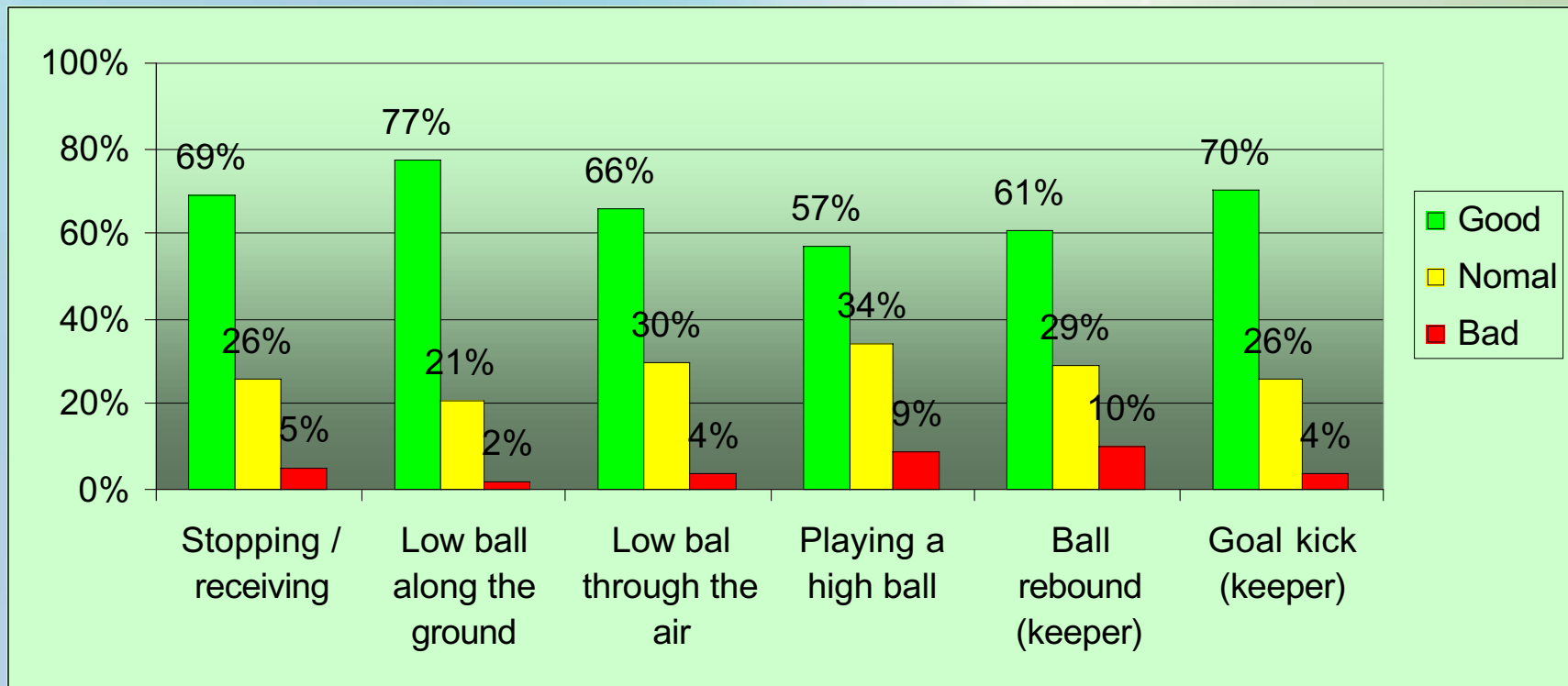
Properties (3)



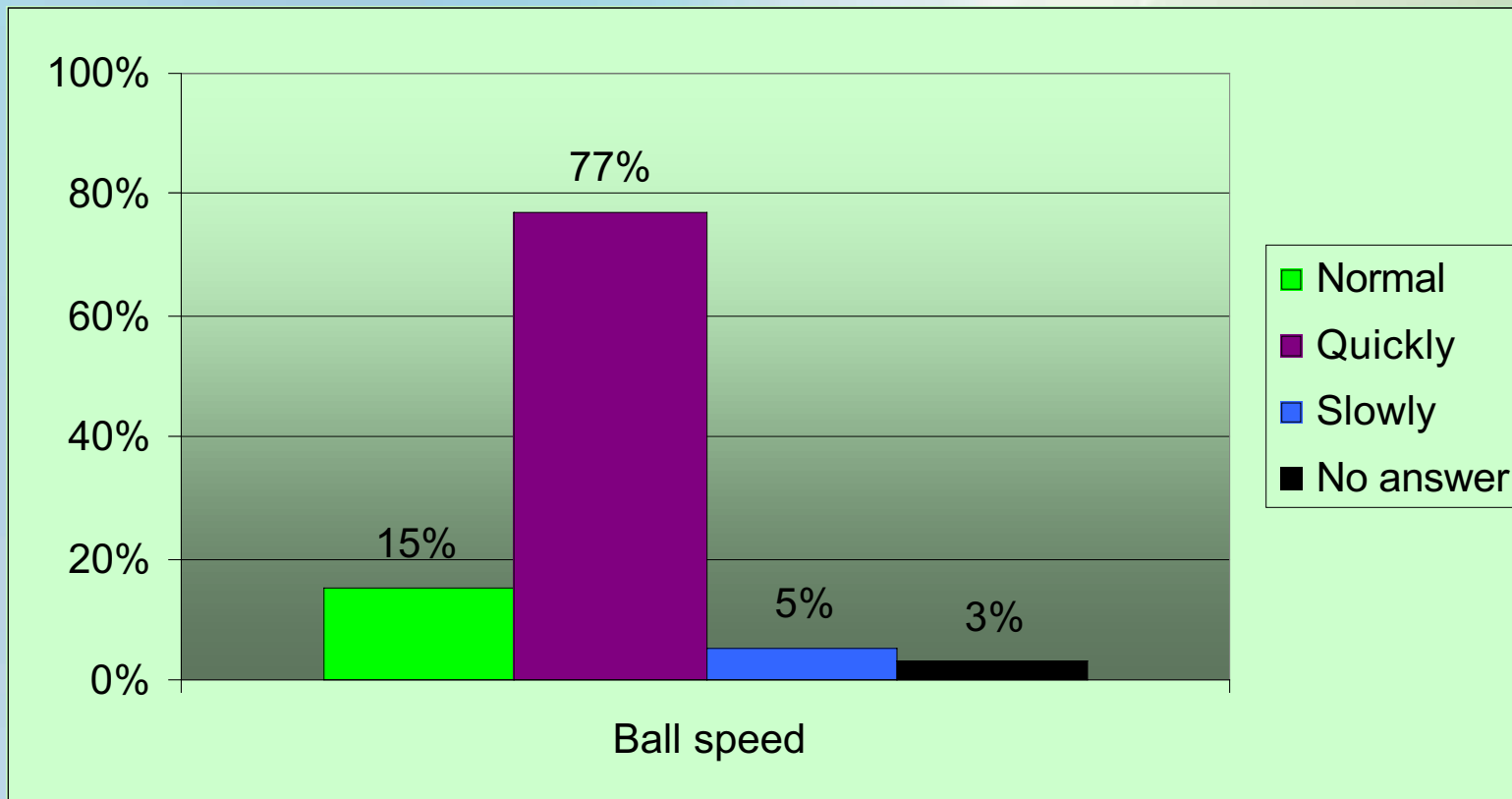
Assessment of the friction and grip



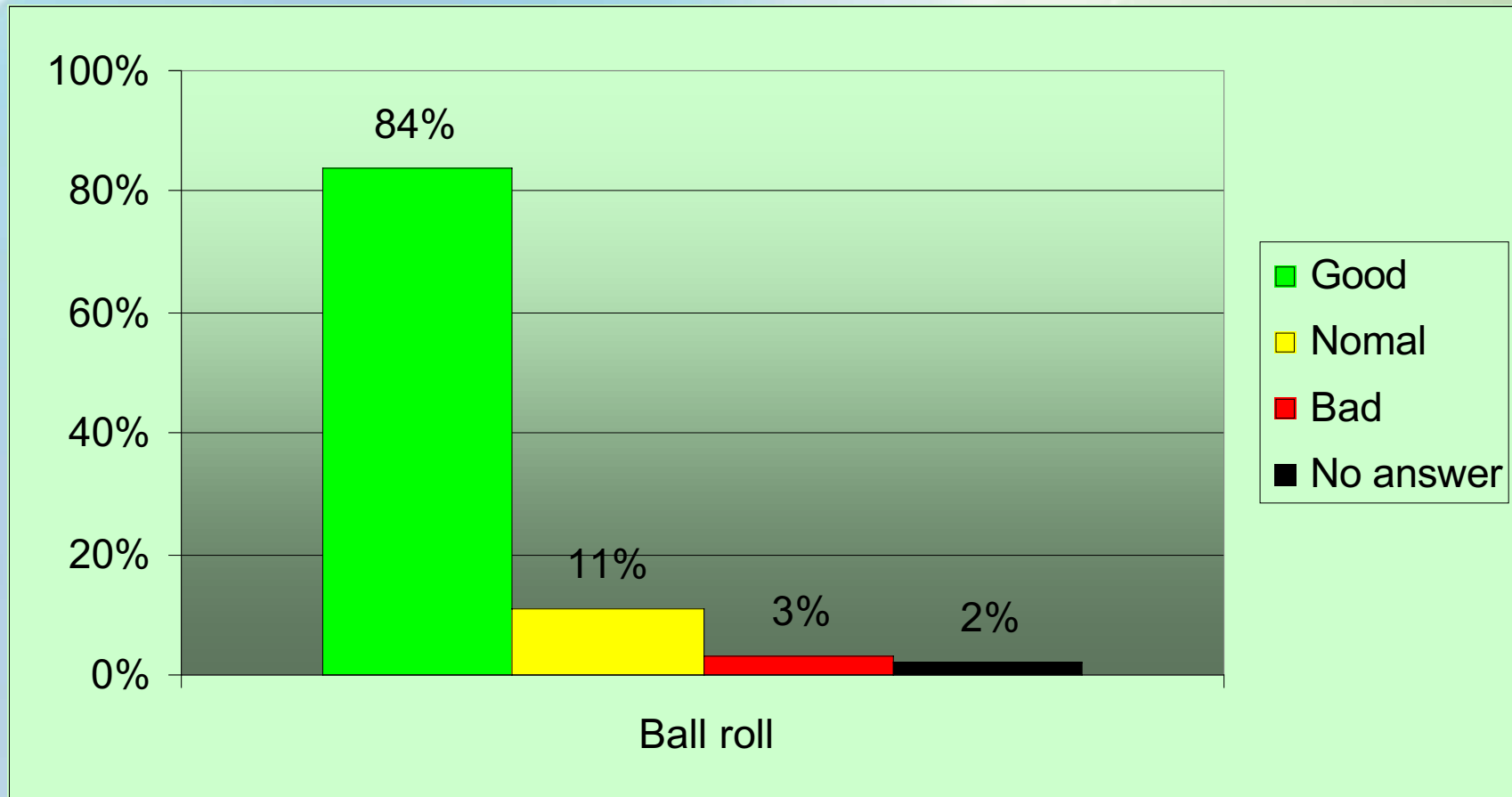
Assessment of the contact with the ball



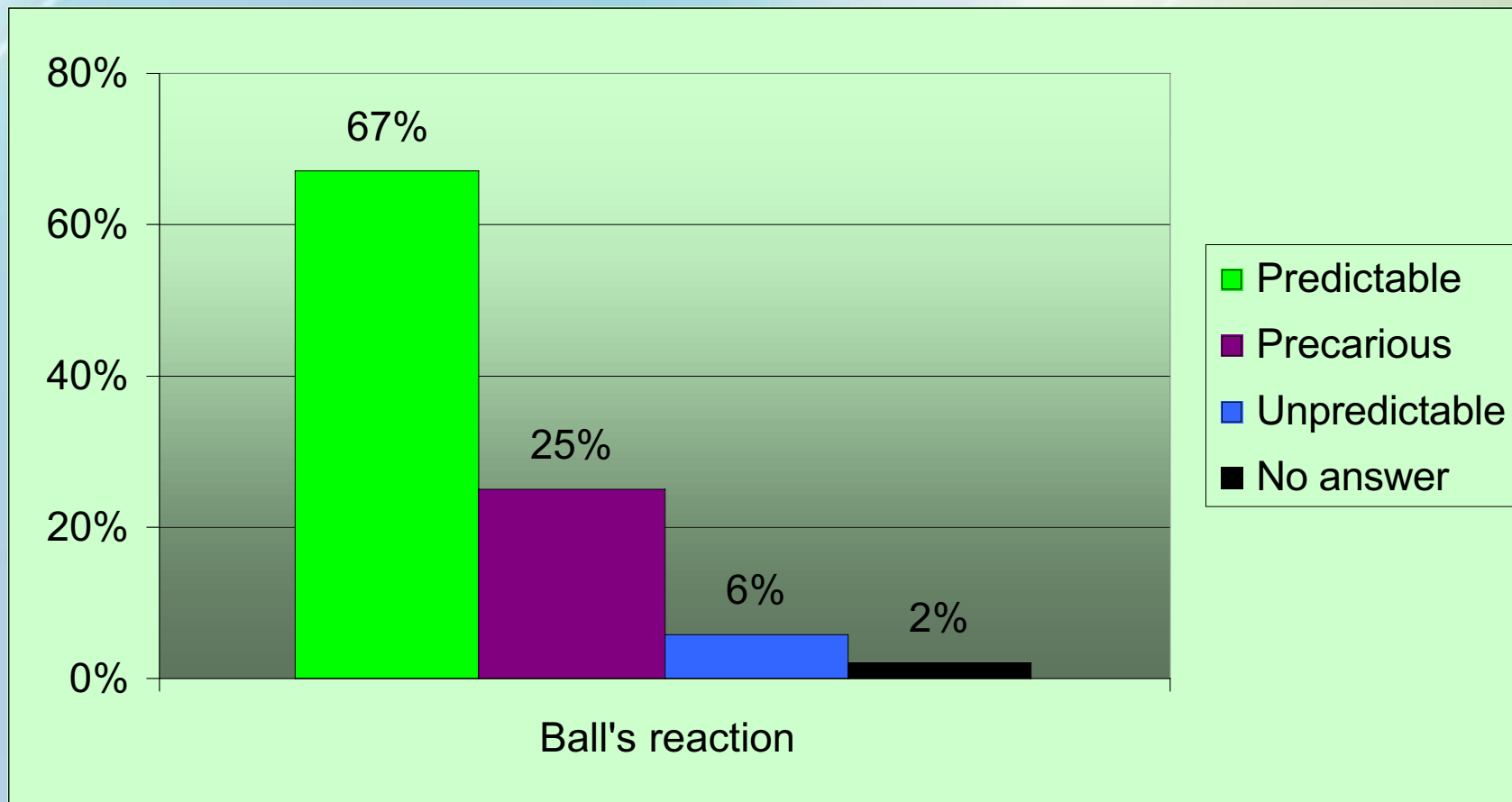
Ball behaviour (1)



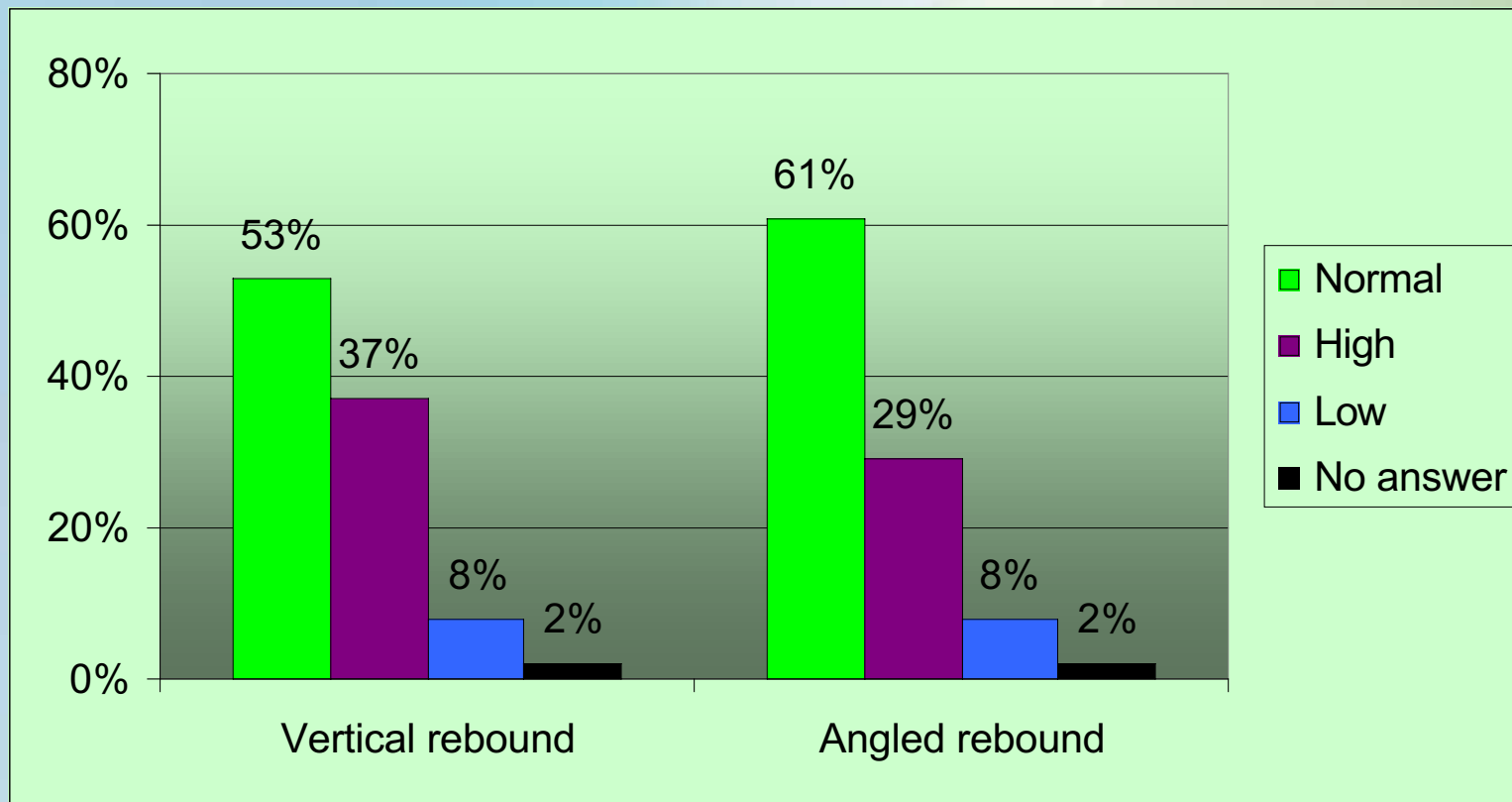
Ball behaviour (2)



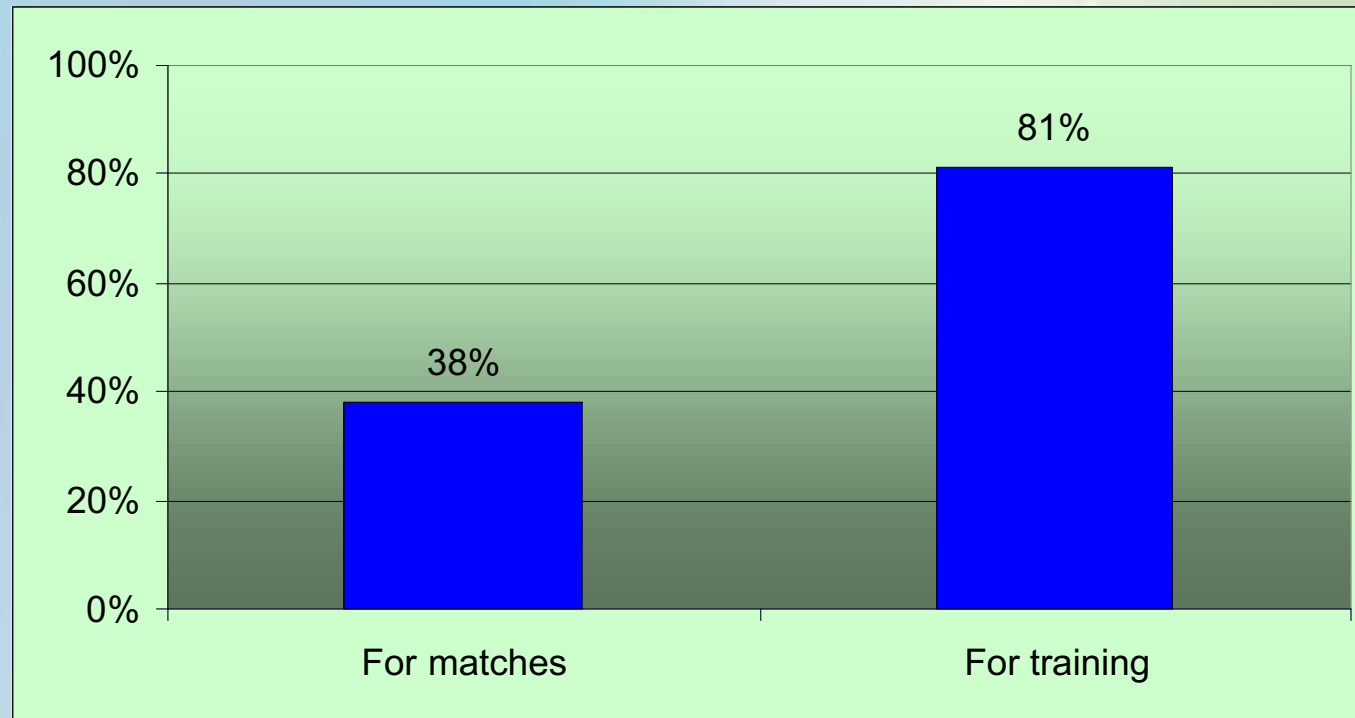
Ball behaviour (3)



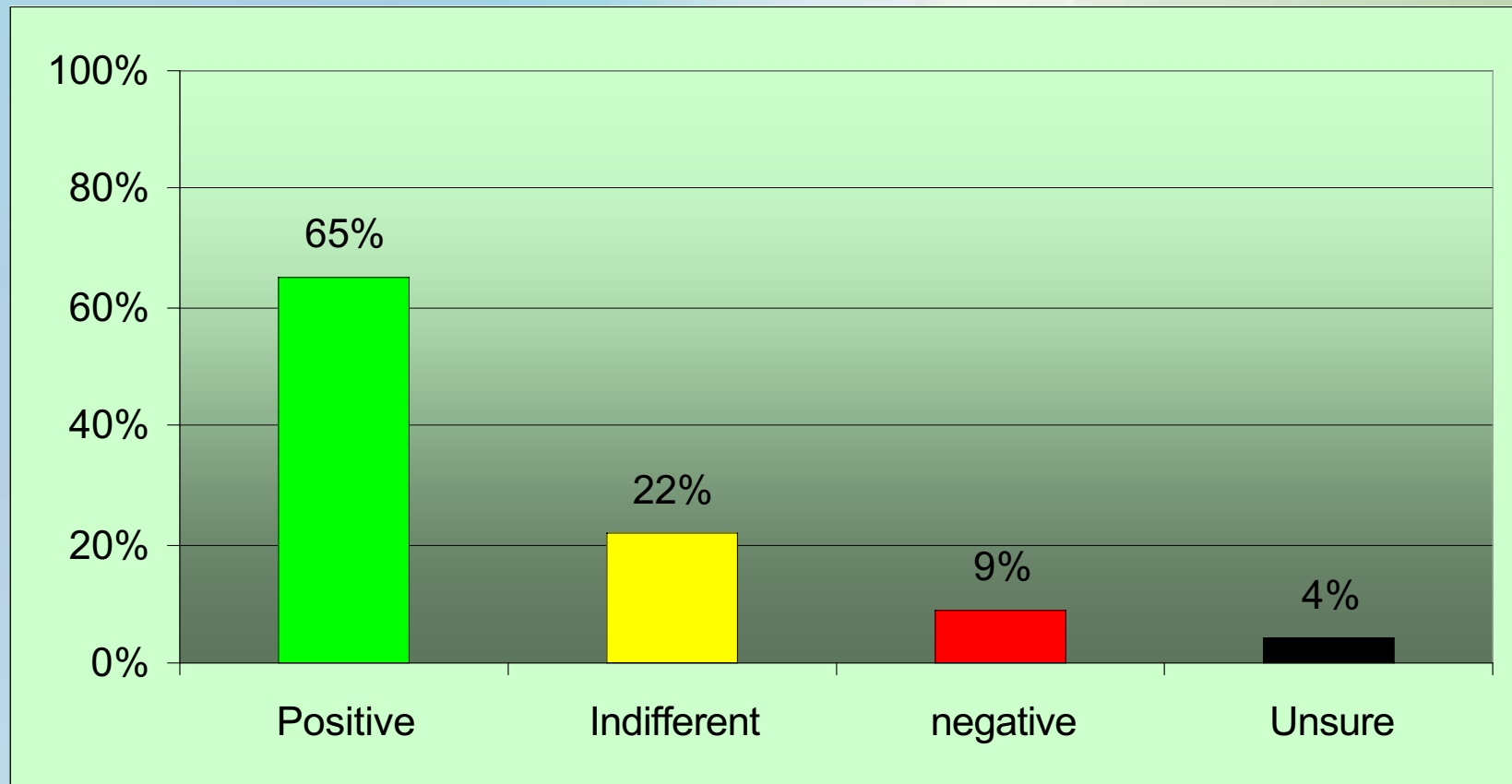
Ball behaviour (4)



Preference artificial turf versus natural turf



General impression



Technical research

Establish a link between the findings of the football players and the technical quality of the artificial turf



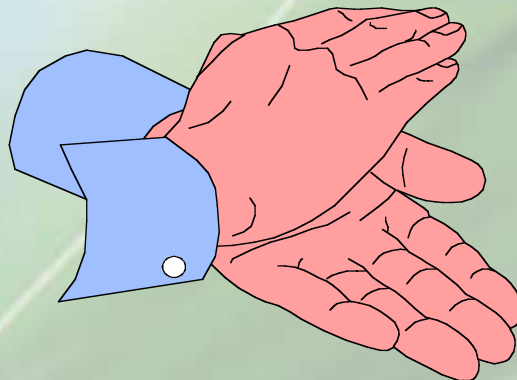
Research results



<u>Properties</u>	<u>Season</u> <u>start</u>	<u>Season</u> <u>end</u>	<u>Dutch standard</u>
Vertical deformation (mm)	11.1	8	8 - 15
Shock absorption (%)	56	51.1	50 - 70
Energy restitution (%)	50	49.6	20 - 50
Ball rebound, vertical (m)	0.88	0.83	0.60 - 1.00
Ball rebound, angled (%)	59	57.6	50 - 80
Ball roll capacity (m)	8.6	12.5	6.0 - 15.0
Translateral friction	0.61	0.54	0.50 - 0.80
Rotational friction (Nm)	45	41.8	30 - 60
Evenness (mm)	< 10	< 10	< 10

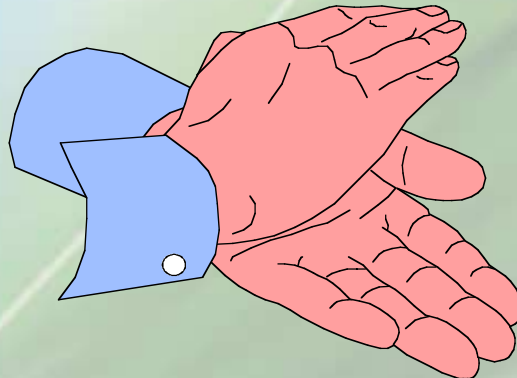
Conclusions, positive (1)

- The majority of players has formed a positive opinion of artificial turf (65%)
- For training, there is a strong preference for artificial turf
- Evenness, running on the pitch, uniformity, playability, friction and grip received a positive assessment, except the sliding tackle



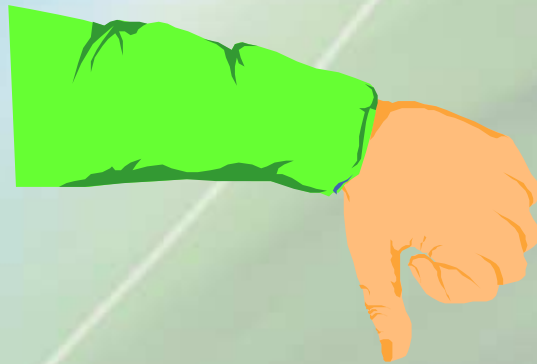
Conclusions, positive (2)

- Ball contact was described as good
- Ball movement was generally considered to be normal, except ball speed
- The findings from the technical research correspond with the players' perceptions



Conclusions, negative

- 47% of the football players experienced the pitch as hard when diving or falling; shock absorption: low
- 77% of the football players experienced the ball speed as high; ball roll capacity: high
- 62% of the football players experienced that artificial turf is unsuitable for making sliding tackles



Recommendations

- Give permission to extend the use of artificial turf pitches in the Netherlands (policy of the KNVB)
- Artificial turf needs further development for shock absorption, ball speed and sliding tackle
- Adjust the Dutch standards for:
 - shock absorption (upwards)
 - ball roll capacity (downwards)
- Develop a method of measurement in order to define a sliding tackle

