COURTS & REC
INTERNATIONAL TRENDS
BIOMECHANICS, DESIGNS & DEVELOPMENTS

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Formula 1 Pit Stops 1950 & Today

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• What’s the take-away?

• If they do it in the sport itself, why wouldn’t we?
Content

- Scope
- Biomechanics on the court
- Solutions available
Scope

• Courts & rec; formerly emphasis on indoor. Or.....in Tennis
• What about outdoor courts?
• Cross-over tendency
ASBA

• Builder qualifications, certifications

• Guidelines for owners
  • Facility design options
  • Product type evaluation
  • Builder evaluation

• Divisions involved
  • Courts & Rec Division
  • Tennis Division
International Sport Federations (~50) Recognized by International Olympic Committee

- Badminton BWF Badminton World Federation
- Basketball FIBA International Basketball Federation
- Tennis ITF International Tennis Federation
- Volleyball FIVB Fédération Internationale de Volleyball
- Athletics IAAF International Association of Athletics Federations
- Soccer FIFA International Soccer Federation

ITF is only Sport Federation that fails to consider biomechanical performance.

It’s all about the ball.
Biomechanics on the court - Tennis & Pickleball

Essentially, they are not considered!

Up to today, all that matters in tennis industry is Court Pace Rating – ball bounce & speed

Except for tennis courts, all other sports surfaces need to respect international standards

**SAFETY, COMFORT & PERFORMANCE for the athlete/player**

- Injury prevention (trauma & stress)
- Feel good before, during and after the game
- Ability to perform the moves necessary to win the game, consistent and proper ball bounce and no disturbing reflections
Biomechanics on the court - Tennis & Pickleball

Just to give you an idea........
Biomechanics on the court - Tennis & Pickleball

Human body has no features like this

Nor can we play like this
Biomechanics on the court - Tennis & Pickleball

Unfortunately we have to take into consideration this.....
Biomechanics on the court - Tennis & Pickleball

What is Low Back Pain?
Back pain can occur and includes the inflamed muscles or strain from repetitive movement from repeated overuse of muscles alongside the spine. It can occur from running, jumping, or while playing tennis.

What is an Ankle Sprain?
An ankle sprain happens when the foot is twisted beyond its normal range of motion, causing stretching or tearing of the ligaments.
The injury can result in pain and swelling of the ankle and difficulty bearing weight.

Patellar Tendon

Ankle Sprain
How does the court play a role in this?........

Playing surface

Hard court has the highest coefficient of friction and lowest shock absorption, which makes sliding much more difficult, leading to shorter stopping distances and theoretically higher peak loads [18]. From the Davis Cup data, 75% of all injuries occurred on hard courts [10••]. Higher ball speeds on hard courts may also lead to higher forces applied on the upper extremities [7]. Conversely, clay is considered a slower surface due to increased shock absorption and loss of ball speed. However, the lower coefficient of friction between the clay surface and the player means that sliding becomes an integral part of playing on clay, which might entail an entirely different set of stresses on the body [19].
So...how can we, as ASBA members, offer solutions to the market that will influence this tendency positively?

By adapting and offering characteristics as comfort and durability typical for other sports surfaces (i.e. coming from indoor or running track) into our court solutions, and combine those with properties required for the game (tennis, pickleball, basketball etc.).

Knowing the game is played faster and faster, and the body has more stress to process all moves.

Friction can be influenced up to a certain level, but with an acrylic finish this will always rather high (compared to carpet, turf, clay or PU)
Other solutions
Thank you for attention!

Any questions, remarks or suggestions?