**Tendon Transfers**

- Definition – the detachment of a tendon of a functioning muscle at its insertion and then its relocation into a new insertion or attachment

- Tendon anatomy – a cord-like, viscoelastic structure
  - Consists of 30% collagen (majority is type 1), 2% elastin, 68% water
  - Structural unit of a tendon is tropocollagen

- Goals of tendon transfers
  - Improve motor function where weakness and imbalance exist
  - Eliminate deforming forces
  - Restore an essential lost motor function
  - Provide better stability by establishing better muscle balance
  - Eliminate the need for bracing

- Principles of tendon transfers
  - Select a suitable tendon
  - Provide a direct or mechanically efficient line of pull
  - Preserve the physiologic gliding mechanism of the tendon
  - Provide adequate muscle-tendon tension

- Phase function and conversion
  - Swing phase muscles versus stance phase muscles
  - In-phase transfer – the muscle contracts during the expected motion
  - Out-of-phase transfer – the muscle is transferred from one phase to the other phase

- Common Tendon Transfer Procedures

<table>
<thead>
<tr>
<th>Indications</th>
<th>Tendon</th>
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<tbody>
<tr>
<td>1. Weakness or insufficiency</td>
<td>STATT, Tibialis Anterior, Tibialis Posterior, Peroneus Longus</td>
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<tr>
<td>a. Dropfoot/Extensor insufficiency</td>
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<td>2. Conditions involving 1st MTPJ/hallux</td>
<td>Adductor Hallucis, Abductor Hallucis, Extensor Hallucis Longus (Jones)</td>
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<td>3. Conditions involving lesser toes</td>
<td>Extensor Digitorum Longus (Hibbs), Flexor Digitorum Longus (Girdlestone)</td>
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<td>4. Flatfoot</td>
<td>Peroneus Brevis, Tibialis Posterior (Kidner), Flexor Digitorum Longus, Flexor Hallucis Longus</td>
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<tr>
<td>a. Tibialis Posterior Dysfunction</td>
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<td>5. Forefoot Equinus</td>
<td>Hibbs, Jones, STATT, Peroneus Longus</td>
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