

## Fetal Myelomeningocele: What to Expect Based on the Level of Spinal Defect

The table below shows muscle function and ability to move independently based on which level (part) of the spine is defective (not working properly). Refer to the Anatomy of the Spine handout for more information about each level of the spine.



**Levels of the spine:**

T: is the thoracic (chest) part of the spine.

L: is the lumbar (lower back) part of the spine.

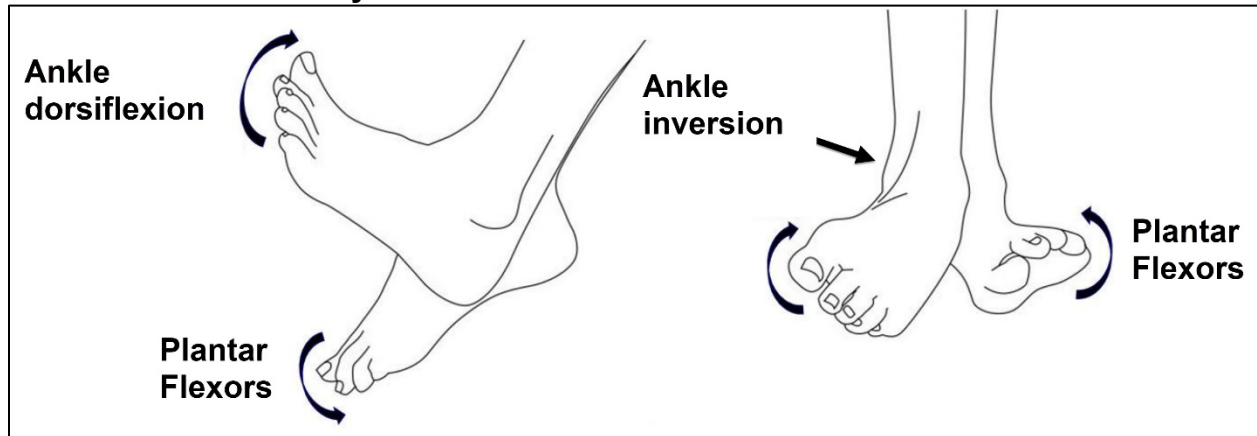
S: is the sacrum (tailbone) at the end of the spine.

**Note:** Normal muscle strength, extension and bending is 5/5, anything less than 5/5 means that there is less muscle function.

Level of the spinal defect:	Possible muscle function:	Possible functional mobility (ability to move around):
T-6 to T-9 T-9 to T-12	<ul style="list-style-type: none"> <li>Some movement in the upper body, but no lower body function</li> </ul>	<ul style="list-style-type: none"> <li>Out in the community: wheelchair/transfer board</li> <li>Possibly at home: walker with crutches</li> </ul> 
L-1	<ul style="list-style-type: none"> <li>Complete upper body function with weak hip bending</li> </ul>	<ul style="list-style-type: none"> <li>Able to stand 1 hour per day</li> <li>Driving with hand controls</li> </ul>
L-2	<ul style="list-style-type: none"> <li><b>Hip flexors</b> (muscles that bring your legs and upper body together) and <b>adductors</b> (muscles in the upper thigh that pull legs together when they contract): 3/5</li> </ul>	<ul style="list-style-type: none"> <li>Out in the community: wheelchair</li> <li>At home when young: may use a walker or crutches</li> <li>When older: wheelchair in home.</li> <li>Able to stand 1 hour per day minimum</li> </ul> 
L-3	<ul style="list-style-type: none"> <li>Knee extension 3/5</li> </ul>	

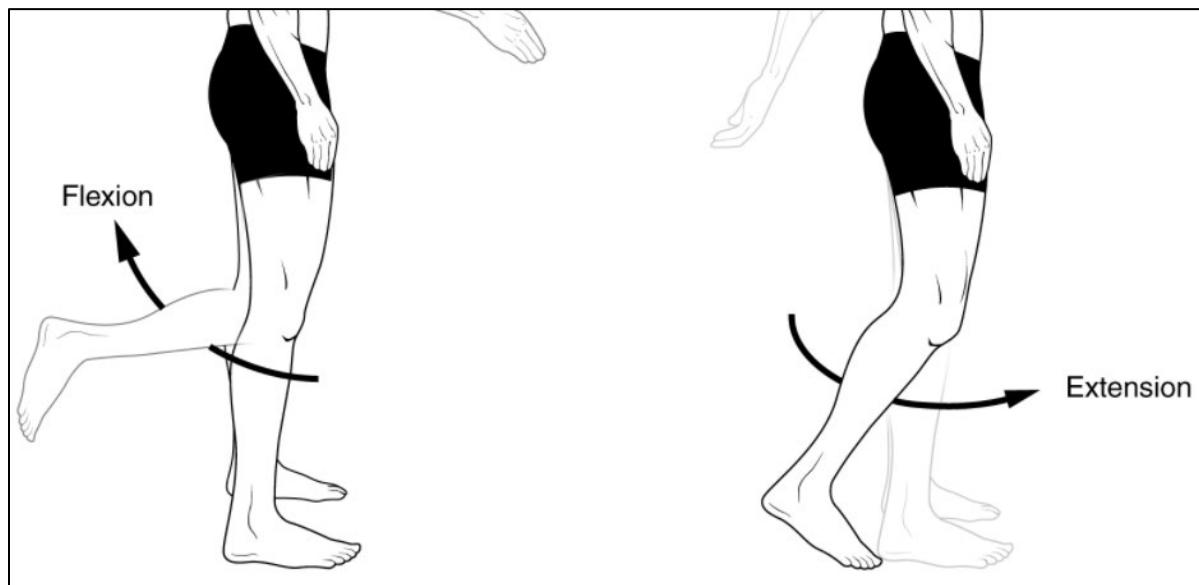
<p><b>L-4</b></p>	<ul style="list-style-type: none"> <li>• <b>Knee flexors</b> (muscles that bend the knee): 3/5 with <b>ankle dorsiflexion</b> (flexing the ankle-pulling the toes toward the leg) 3/5 <ul style="list-style-type: none"> <li>○ This level is key. If the <b>quadriceps</b> (large muscle in the front of the thigh) are able to function, the ability to walk is higher.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Out in the community: wheelchair, walker, crutches, cane</li> <li>• When young: may walk without support, later may require upper body support to walk.</li> </ul>
<p><b>L-5</b></p>	<ul style="list-style-type: none"> <li>• <b>Hip abductors</b> (muscles that move the leg away from the body and help rotate the hip) 2/5</li> <li>• <b>Lateral knee flexors</b> (muscles that bend the outside of the knee) 3/5</li> <li>• <b>Ankle invertors</b> (Turn the sole of the foot so that it faces inward) 3/5</li> </ul>	
<p><b>S1</b></p>	<ul style="list-style-type: none"> <li>• <b>Hip abductors</b> (muscles that move the leg away from the body and help rotate the hip) 3/5</li> <li>• <b>Weak hip extensors</b> (muscles that help lift your leg up and back like the hamstrings and glutes) 2/5</li> <li>• <b>Plantar flexors</b> (muscles that help bend or point the foot or toes, like when you are on the tips of your toes) 2/5</li> </ul>	<ul style="list-style-type: none"> <li>• Out in the community: walking with walker, crutches, cane. For long distance may need a wheelchair, bike or a scooter. May move without any support.</li> <li>• Home: May need no support</li> </ul>

**Figure 1:**  
**Ankle and foot anatomy**

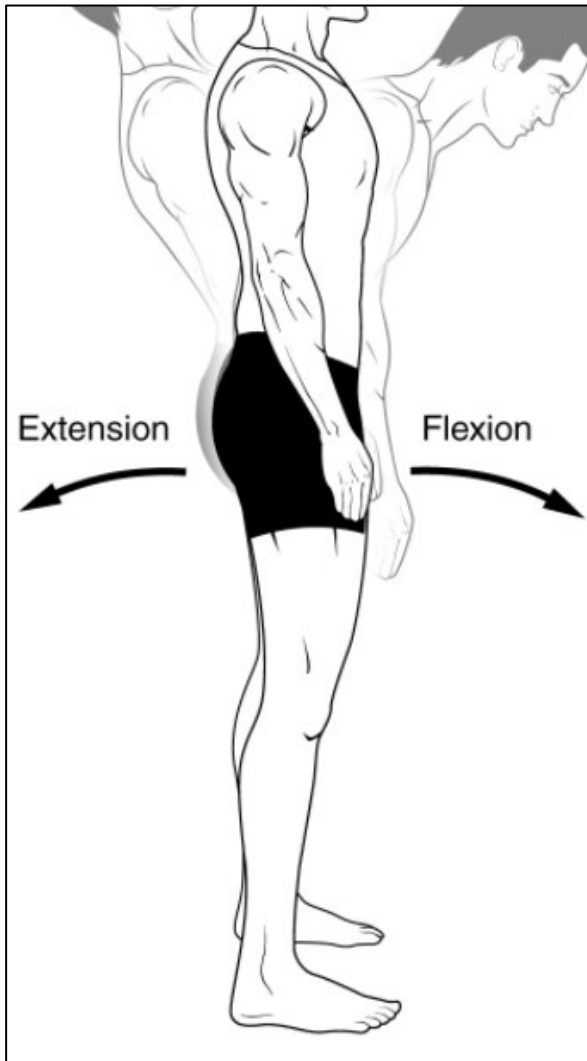


© 2020 by Li S. [Toxins. 2020; 12\(10\):646.](#) (CC BY 4.0). Labels modified from original.

**Figure 2:**  
**Knee flexion and extension**



**Figure 3:  
Hip flexion and extension**



Figures 2 and 3; © Jan 5, 2021 OpenStax. (CC BY 4.0). Images cropped from original. Access for free [here](#).

Disclaimer: This document contains information and/or instructional materials developed by Michigan Medicine for the typical patient with your condition. It may include links to online content that was not created by Michigan Medicine and for which Michigan Medicine does not assume responsibility. It does not replace medical advice from your health care provider because your experience may differ from that of the typical patient. Talk to your health care provider if you have any questions about this document, your condition or your treatment plan.

Edited by: Karelyn Munro BA

Patient Education by [Michigan Medicine](#) is licensed under a [Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International Public License](#). Last Revised 03/2021