

Deep fascia of the sole

From where	fibrous flexor sheath	Plantar aponeurosis
Def	thick deep fascia in planter aspect of toes	thick deep fascia in central part of the sole
Content	<ul style="list-style-type: none"> - of big toe: flexor hallucis longus - of other toes: flexor digitorum longus & brevis 	-----
Fun	hold tendons to bone preventing their bowing during flexion	protect deep structures
Attachment	-----	<p>Δ with</p> <ul style="list-style-type: none"> - Apex: attach to tubercle of calcaneus - Base: give 5 slips that attach to fibrous flexor sheath of the toes. <p>-These slips give passage to the planter digital nerves & vessels and lumbrical muscles.</p> <p>-the slips are interconnected by superficial transverse metatarsal ligament.</p>

Muscles of the sole

From where	1 st layer	2 nd layer	3 rd layer	4 th layer
Content	3 muscles	2 tendons & 2 muscles	3 muscles	2 tendons & 2 muscles
Muscles	<p>1- Abductor hallucis:</p> <ul style="list-style-type: none"> ♥ forms the medial margin of the foot ♥ action: Abduct the big toe <p>2- Abductor digiti minimi:</p> <ul style="list-style-type: none"> ♥ forms the lateral margin of the foot ♥ action: Abduct the little toe <p>3- Flexor digitorum brevis:</p> <ul style="list-style-type: none"> ♥ in the middle of foot , just above plantar aponeurosis ♥ Flex the lateral 4 toes 	<p>1- flexor digitorum accessories: It straighten the oblique line of pull of the tendon of flexor digitorum longus</p> <p>2- lumbrical muscles Flex the M/P joint & extend the I/p joint of the lateral 4 toes</p>	<p>1- flexor hallucis brevis Action: Flex the M/P joint of the big toe</p> <p>2- adductor hallucis Action: Adduct the big toes</p> <p>3- flexor digiti minimi brevis: Action: Flex the M/P joint of the little toe</p>	<p>1- planer interossei : Adduct the toes 3-5 toward the axis of the 2 nd toe PAD</p> <p>2- dorsal interossei : Abduct the toes 2-4 toward the axis of the 2 nd toe DAB</p>
Tendons		<p>1- tendon of flexor hallucis longus</p> <p>2- tendon of flexor digitorum longus:</p> <ul style="list-style-type: none"> - Cross superficial to flexor hallucis longus. - Its lateral side receive the insertion of flexor digitorum accessorius at middle of sole , it gives 4 tendons that give origin to lumbricals then pass () the slips of tendons of flexor digit. brevis to insert in plantar surface of bases of distal phalanges 		<p>1- Peroneus longus</p> <p>2- Tibialis post.</p>

Nerve of the sole

From where	MEDIAL PLANTAR NERVE	Lateral plantar nerve
O:	- a terminal branch of post. tibial nerve - deep to flexor retinaculum	
C & r:	(runs with the artery on its medial side) - pass deep to abductor hallucis ← - then () abductor hallucis & flexor digi. Brevis	(runs with the artery on its lateral side) - Pass deep to abductor hallucis. - then deep to flexor digitorum brevis i.e. () FDB & flexor digitorum accessories to base of 5th metatarsal where it divide into superficial & deep brs - the deep br. runs medially between the 3rd layer (adductor hallucis) and the 4th layer (tendons of peroneus longus & tibialis post.)
branches:		
Cutaneous:	- Medial 2 /3 of sole - plantar surface of medial 3 1/2 toes - N.B: medial plantar n. has similar distribution as median n. in hand	- Skin of lateral 1 /3 of sole - skin of plantar surface of lateral 1 ½ toes
Muscular:	1-(1st layer) abductor hallucis & flexor digitorum brevis 2-(2nd layer) 1st lumbrical 3-(3rd layer) flexor hallucis brevis	-abductor digiti minimi -Flexor digitorum accessories -lateral 3 lumbricals -flexor digiti minimi brevis - adductor hallucis -all interossei