



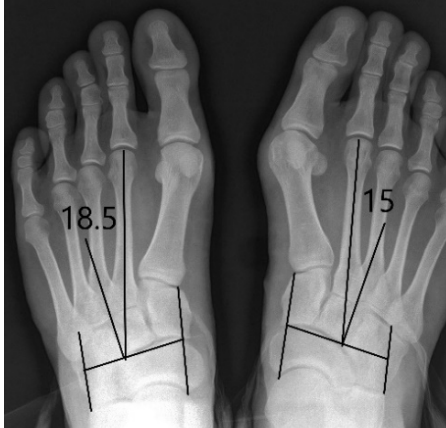
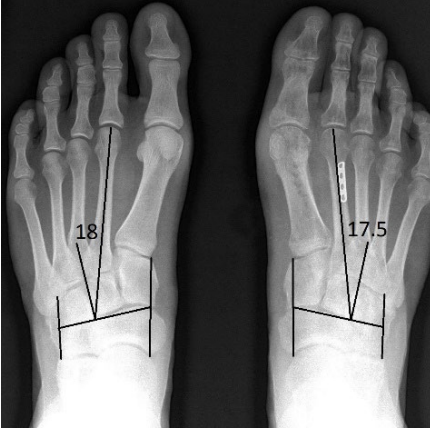
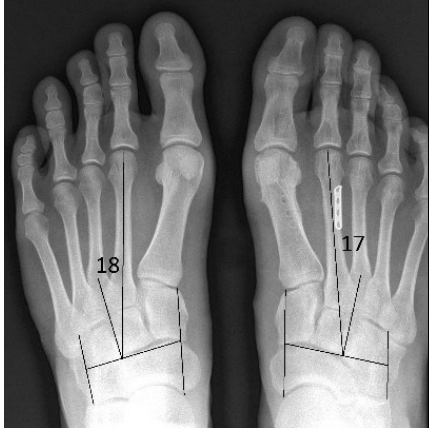
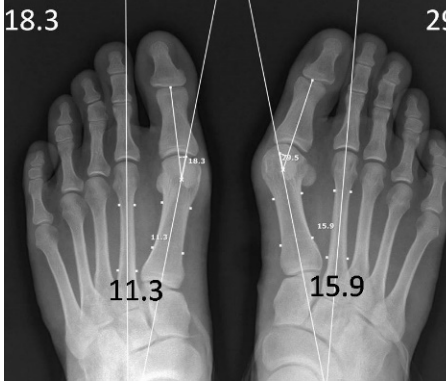

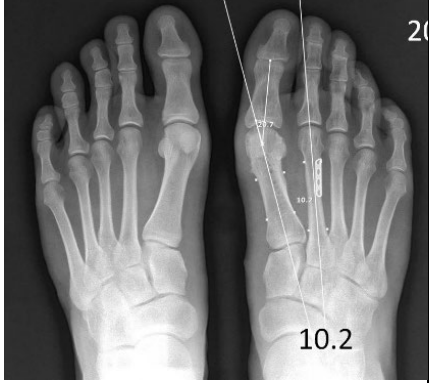


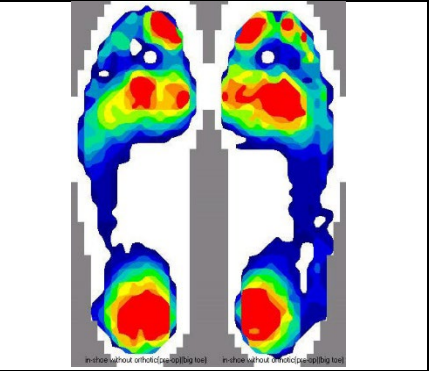


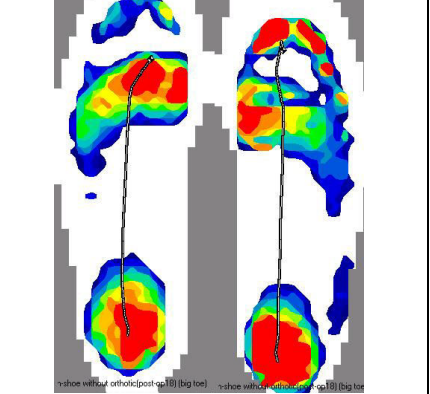
Bone & Joint
Open

Supplementary Material


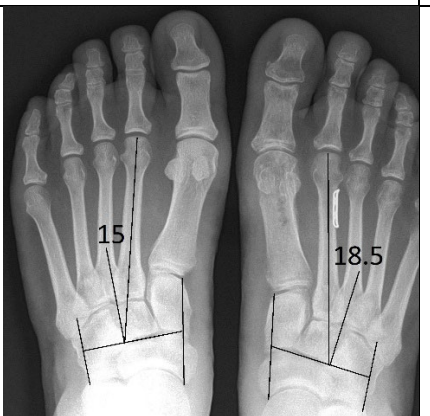
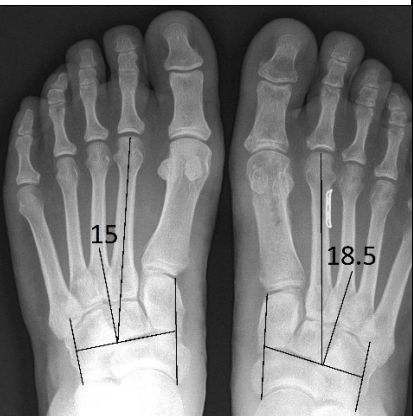
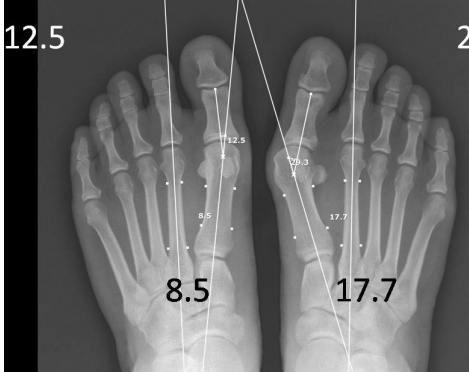
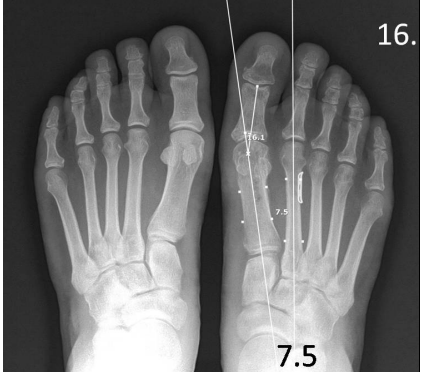
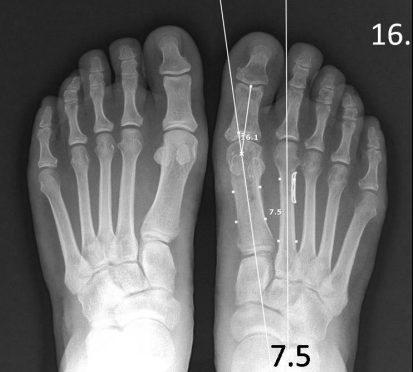


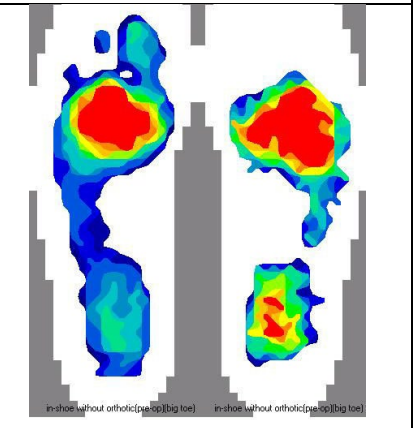


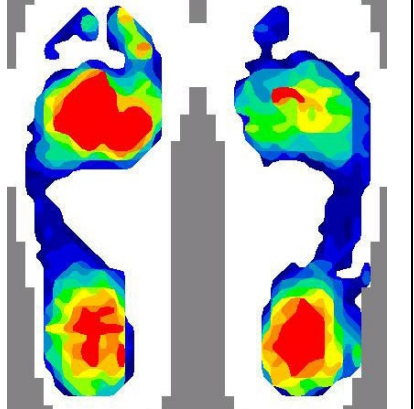
10.1302/2633-1462.23.BJO-2020-0195.R1

Image gallery. MPA are the numbers at top left and right corners of their radiographs and IMA are the numbers near the bottom. The gradation of total force is represented by colours from zero in white to blue, yellow and the maximum in red.

Case# 1678 (Rt foot only)

	Case# 1678 (Rt foot only)		
	Pre - Op	6-month post-op	18-month post-op
M A A			
I M A & M P A			
	Top View Photo	Callus View Photo	F-Scan
P R E			
P O S T			

Case# 1679 (Rt foot only)

	Pre - Op	6-month post-op	6-month post-op
M A A			
I M A & M P A			
	Top View Photo	Callus View Photo	F-Scan
P R E			
P O S T			

Case# 1680 (Rt foot only)

	Pre - Op	6-month post-op	12-month post-op
M A A			
I M A & M P A			
	Top View Photo	Callus View Photo	F-Scan
P R E			
P O S T			

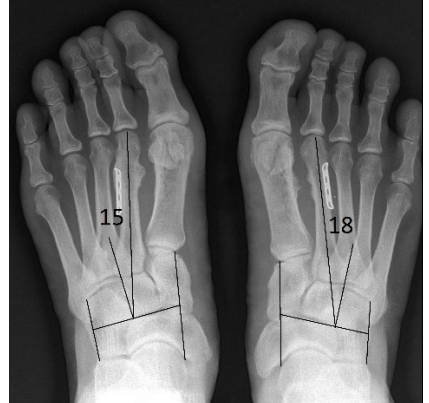
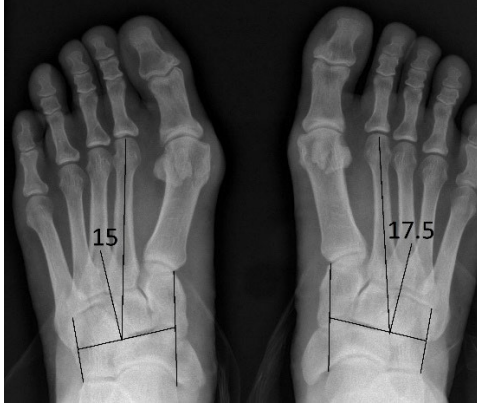
Case# 1681

Pre - Op

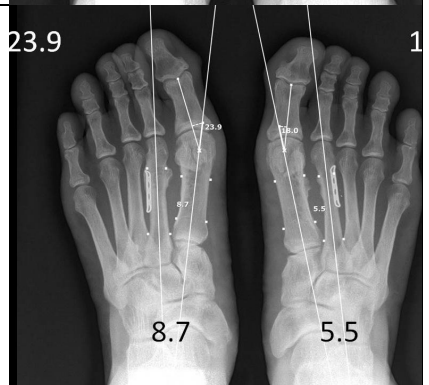
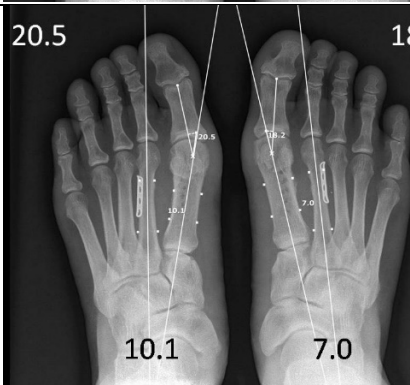
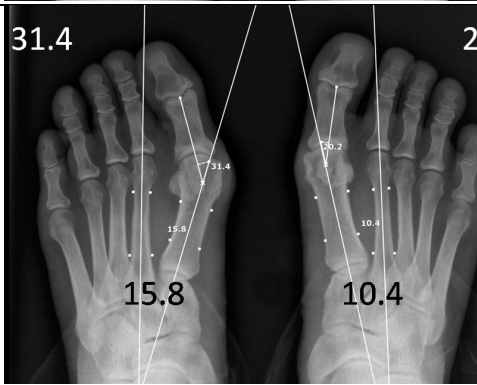
6-month post-op

24-month post-op

**M
A
A**



**I
M
A
&
M
P
A**

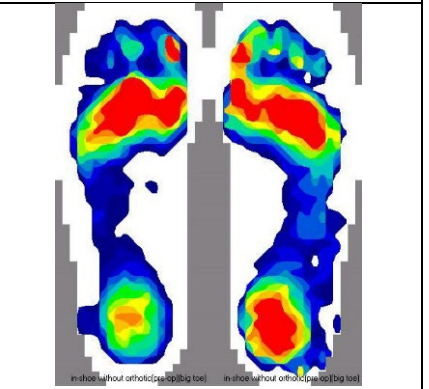


Top View Photo

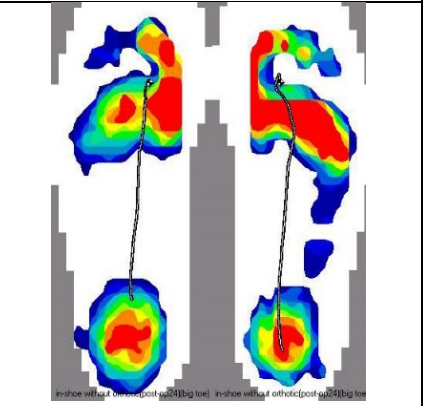
Callus View Photo

F-Scan

**P
R
E**



**P
O
S
T**



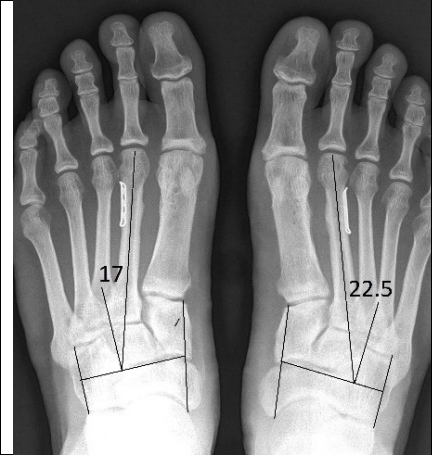
Case# 1682

Pre - Op

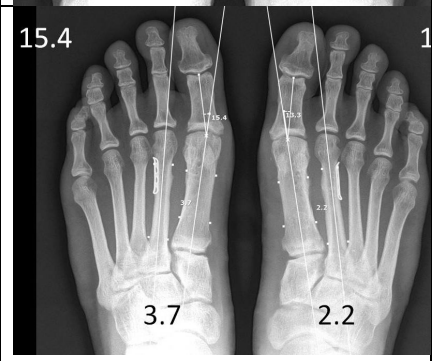
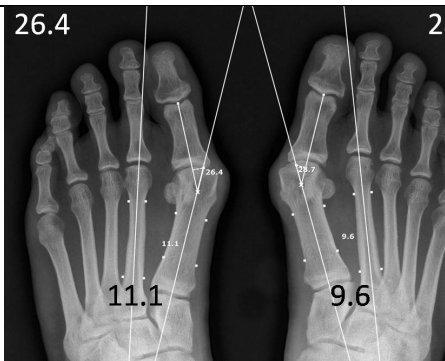
6-month post-op

24-month post-op

**M
A
A**



**I
M
A
&
M
P
A**

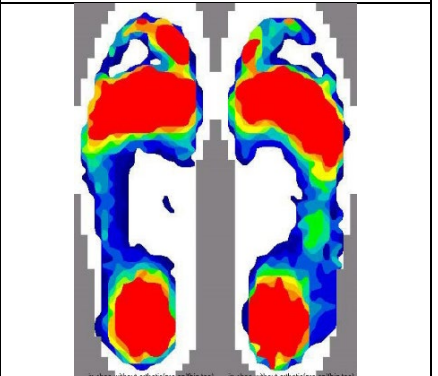


Top View Photo

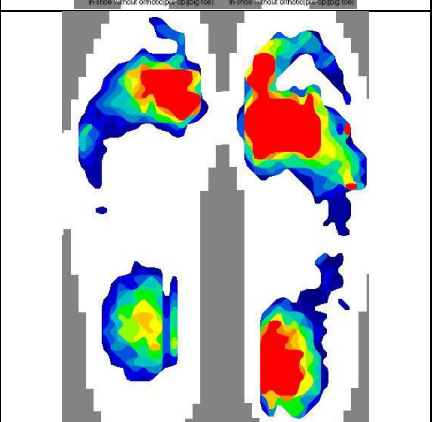
Callus View Photo

F-Scan

**P
R
E**



**P
O
S
T**



Case# 1683

Pre - Op

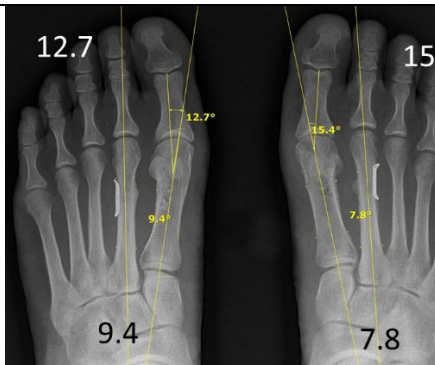
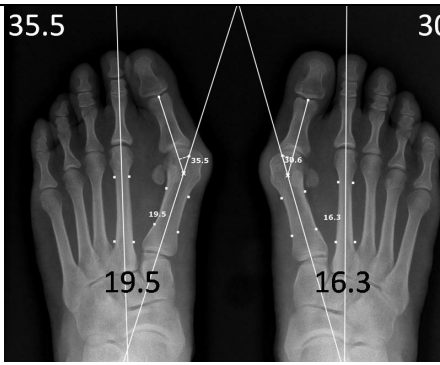
6-month post-op

24-month post-op

**M
A
A**



**I
M
A
&
M
P
A**

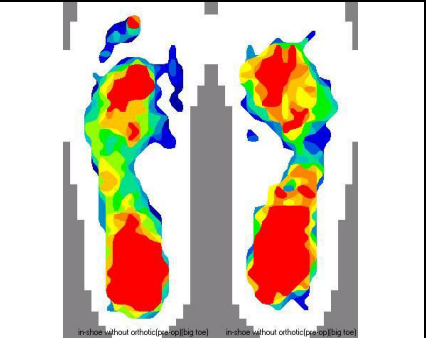


Top View Photo

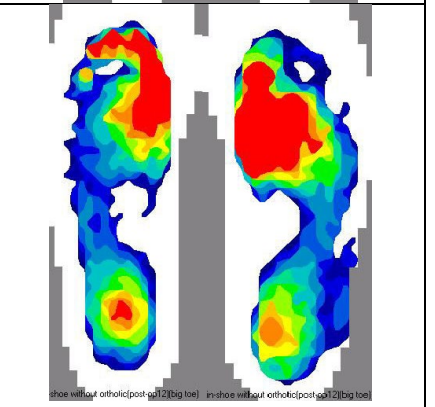
Callus View Photo

F-Scan

**P
R
E**



**P
O
S
T**



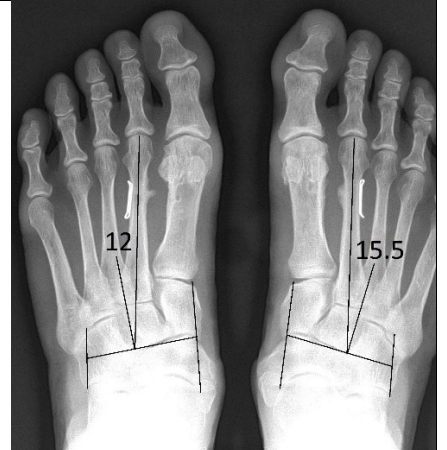
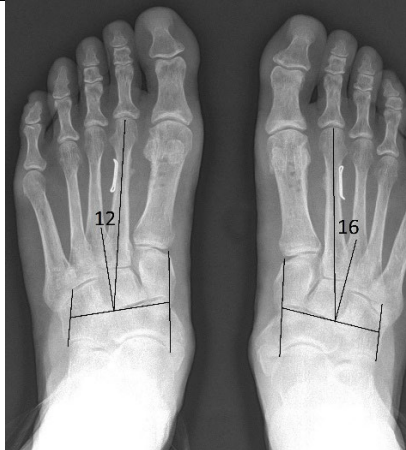
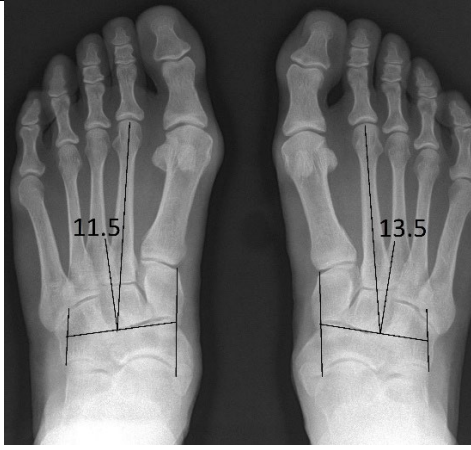
Case# 1684

Pre - Op

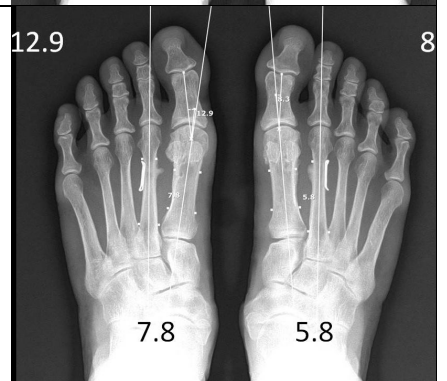
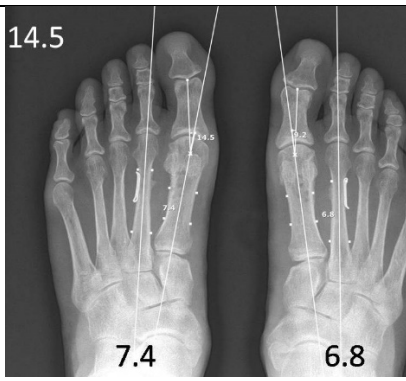
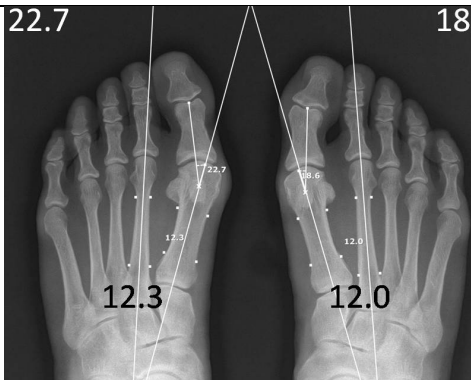
6-month post-op

24-month post-op

**M
A
A**



**I
M
A
&
M
P
A**

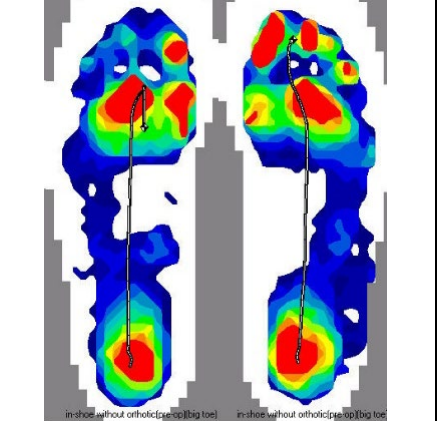


Top View Photo

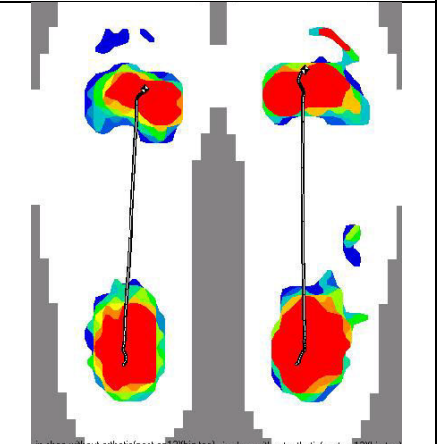
Callus View Photo

F-Scan

**P
R
E**



**P
O
S
T**



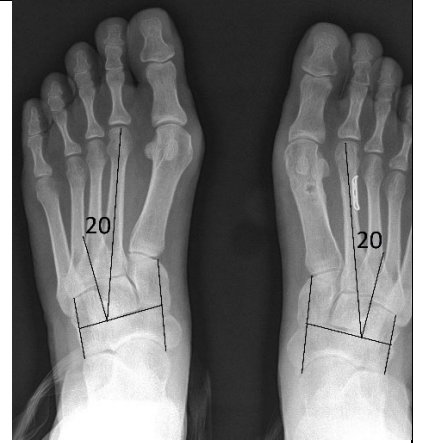
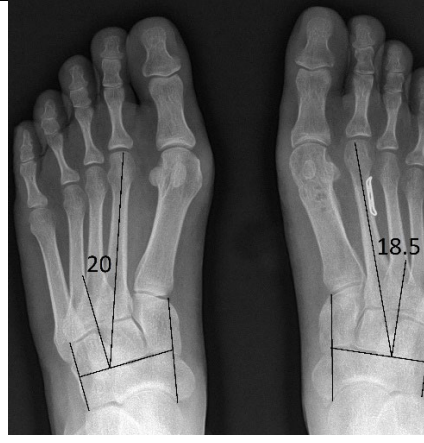
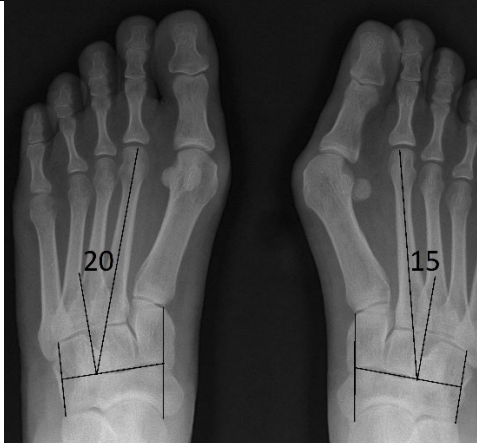
Case# 1685 (Rt foot only)

Pre - Op

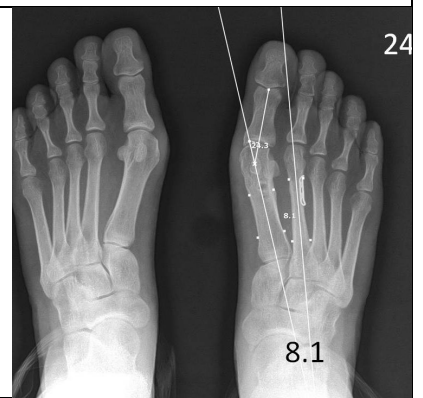
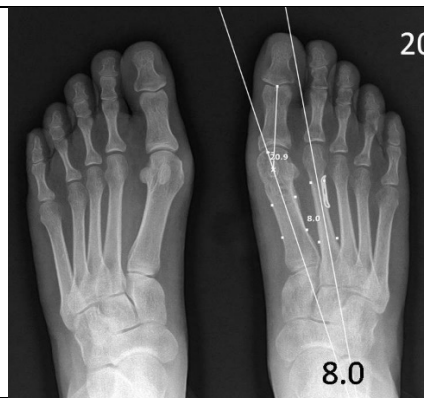
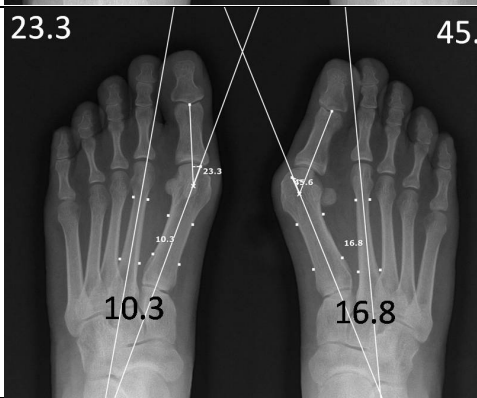
6-month post-op

12-month post-op

**M
A
A**



**I
M
A
&
M
P
A**

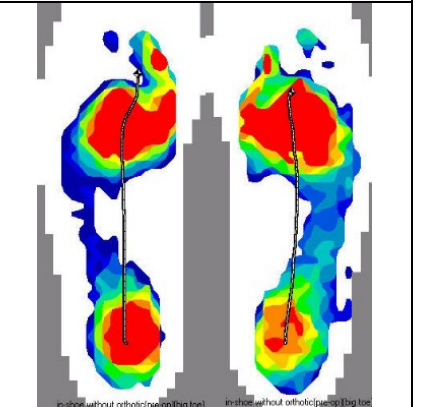
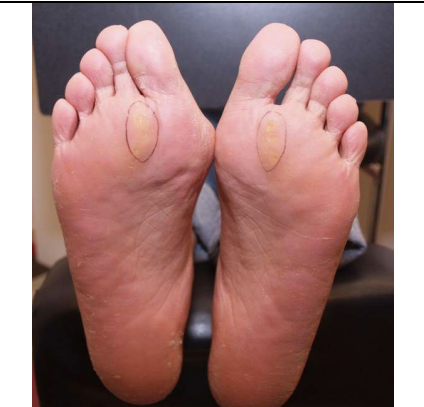


Top View Photo

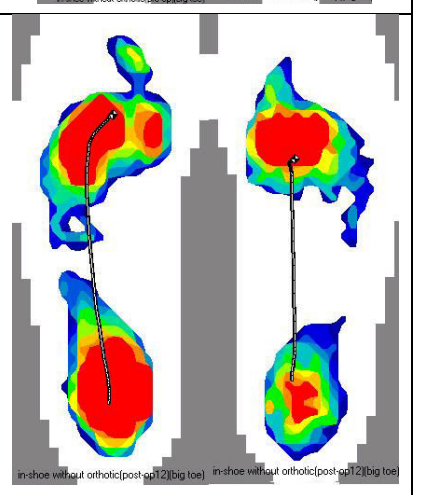
Callus View Photo

F-Scan

**P
R
E**



**P
O
S
T**



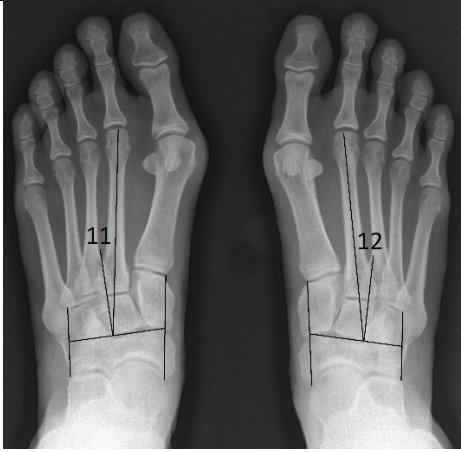
Case# 1686 (Lt foot only)

Pre - Op

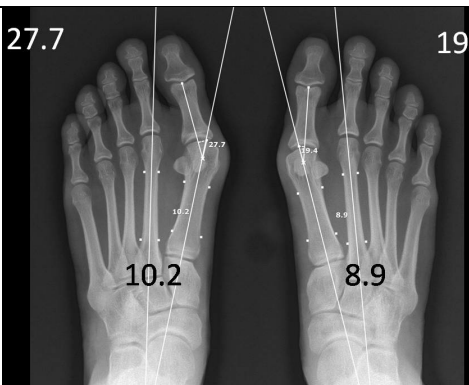
6-month post-op

24-month post-op

**M
A
A**



**I
M
&
M
P
A**

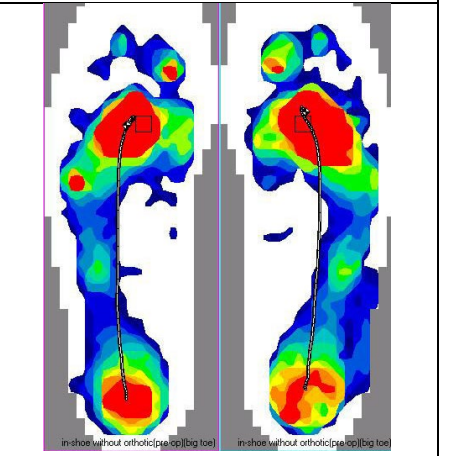


Top View Photo

**Callus View
Photo**

F-Scan

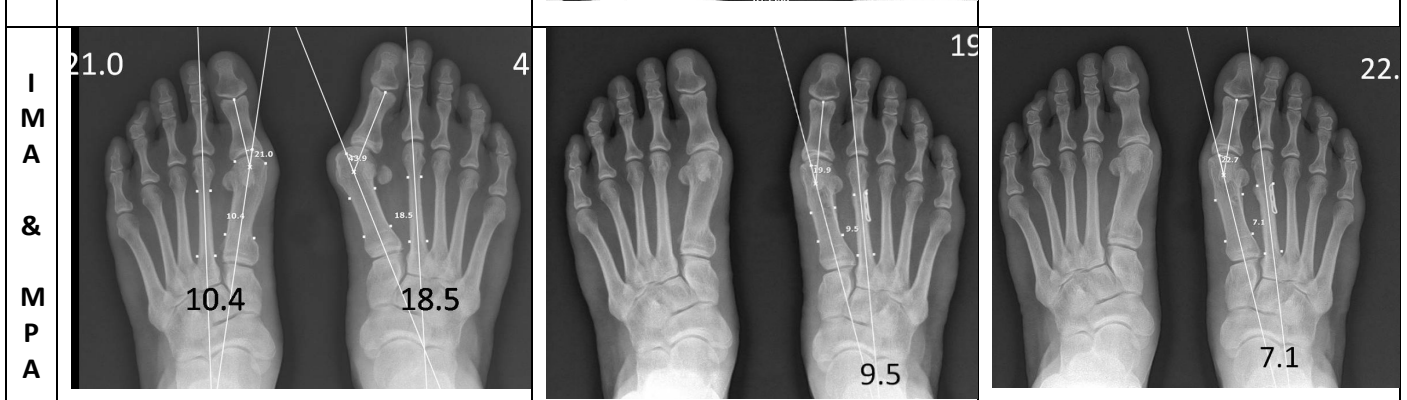
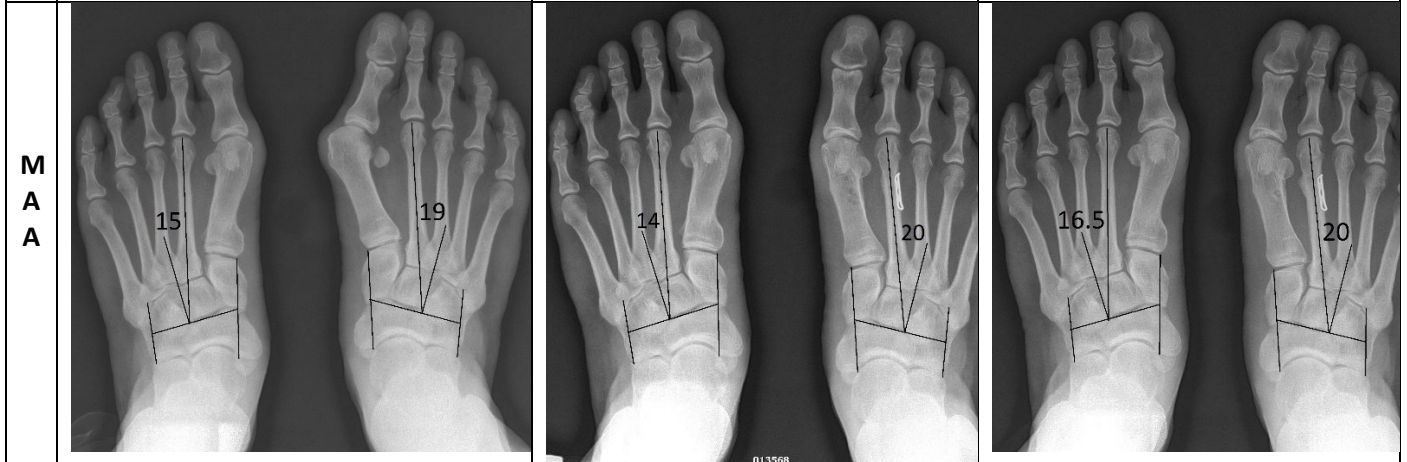
**P
R
E**





Case# 1687 (Rt foot only)

	Pre - Op	6-month post-op	24-month post-op
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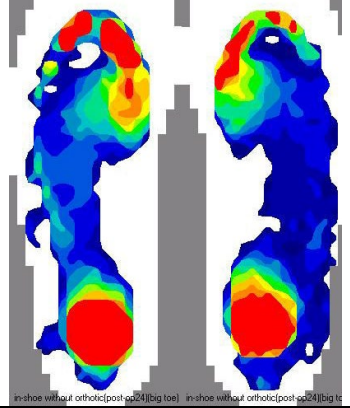
	Top View Photo	Callus View Photo	F-Scan
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Case# 1688			
	Pre - Op	6-month post-op	24-month post-op
M A A			
I M A & M P A	35.6 35.6 15.3 13.7	24.4 23.9 7.1 6.5	23.9 23.9 7.6 7.0
	Top View Photo	Callus View Photo	F-Scan
P R E			

P
O
S
T



Case# 1689			
	Pre - Op	6-month post-op	36-month post-op
M A A			
I M A & M P A			
	Top View Photo	Callus View Photo	F-Scan
P R E			N/A
P O S T			N/A

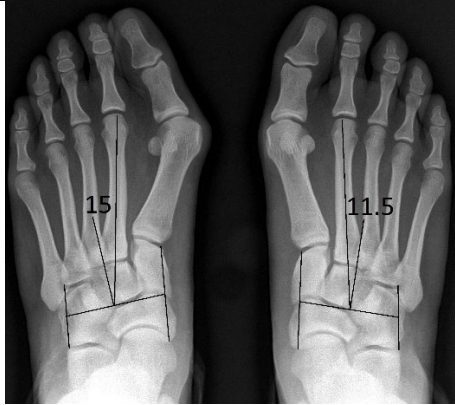
Case# 1690

Pre - Op

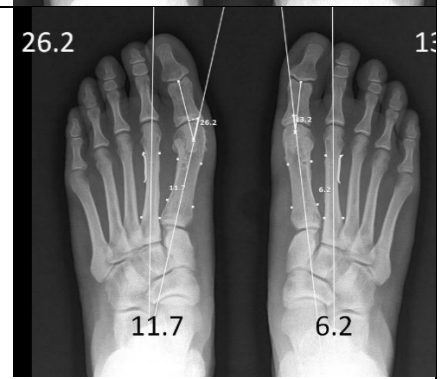
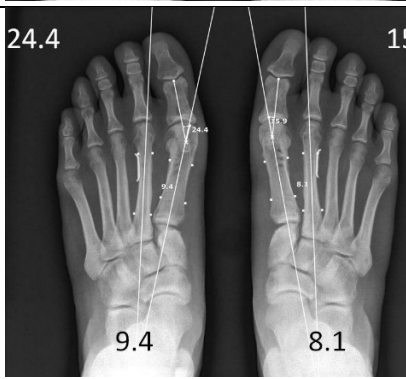
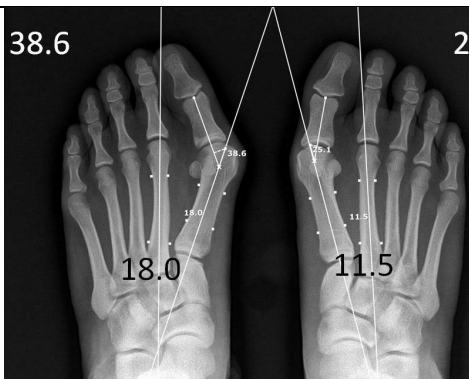
6-month post-op

24-month post-op

**M
A
A**



**I
M
A
&
M
P
A**

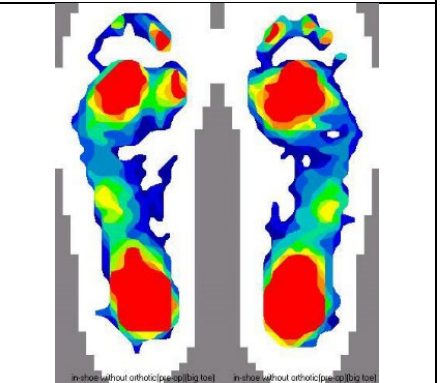


Top View Photo

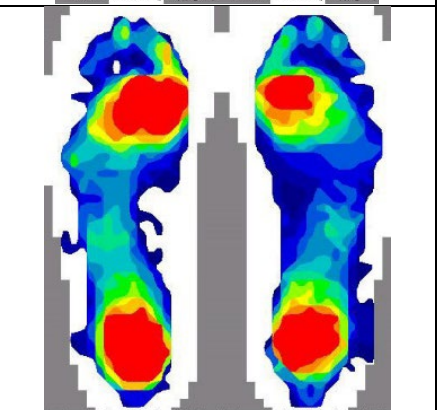
Callus View Photo

F-Scan

**P
R
E**




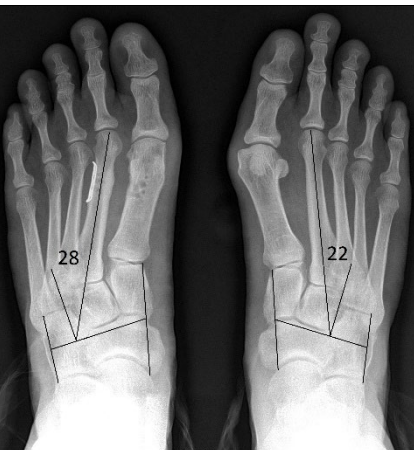

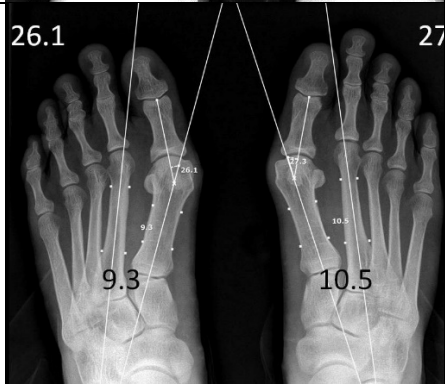




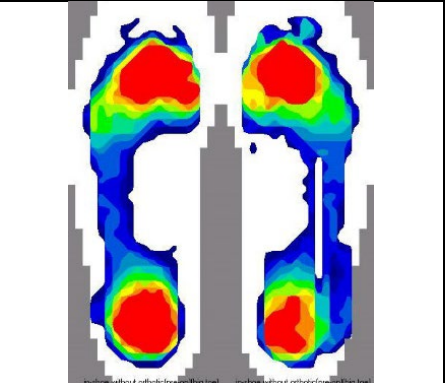


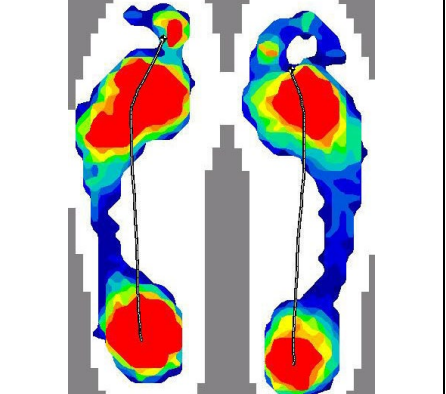
**P
O
S
T**



		Case# 1691					
		Pre - Op		6-month post-op		12-month post-op	
M A A							
		19	15	22.5	19.5	23	17
I M A & M P A							
		46.2	49	31.9	31	29.7	32
		18.6	19.4	12.5	12.8	12.5	12.2
		Top View Photo		Callus View Photo		F-Scan	
P R E							
P O S T							

in-shoe without orthotic(post,66) (big toe) in-shoe without orthotic(post,68) (big toe)

Case# 1692 (Lt foot only)

	Pre - Op	6-month post-op	24-month post-op
M A A			
I M A & M P A			
	Top View Photo	Callus View Photo	F-Scan
P R E			
P O S T			

Case# 1693			
	Pre - Op	6-month post-op	6-month post-op
M A A			
I M A & M P A			
	Top View Photo	Callus View Photo	F-Scan
P R E			
P O S T	N/A Overseas patient	N/A Overseas patient	N/A Overseas patient

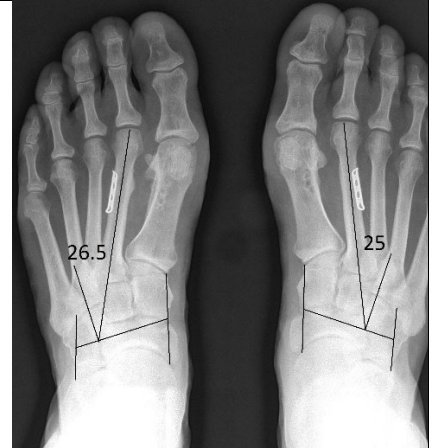
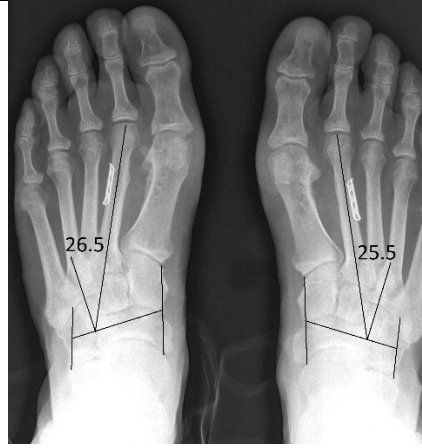
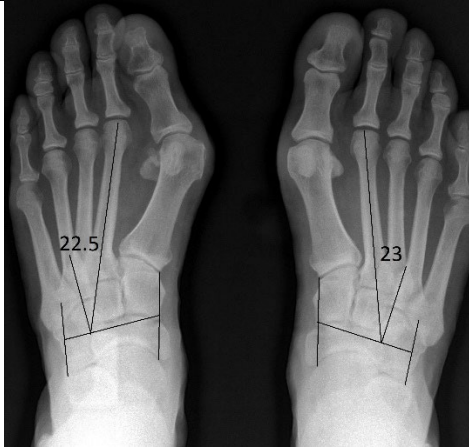
Case# 1694

Pre - Op

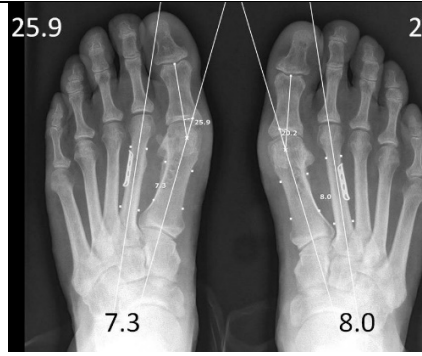
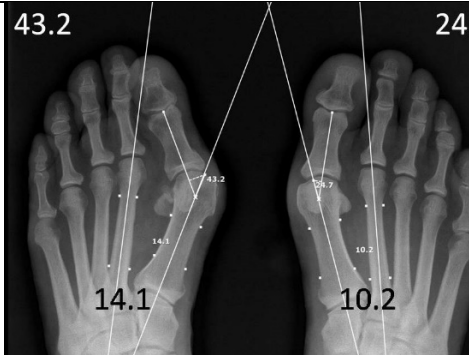
6-month post-op

12-month post-op

**M
A
A**



**I
M
A
&
M
P
A**

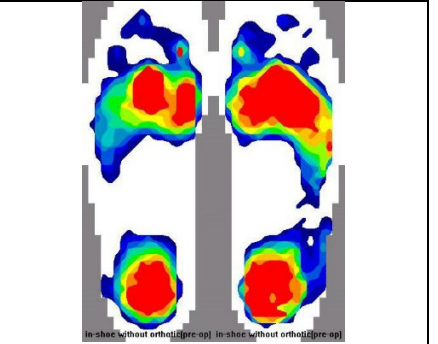


Top View Photo

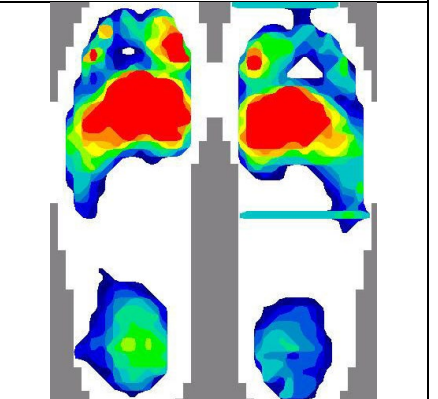
Callus View Photo

F-Scan

**P
R
E**



**P
O
S
T**



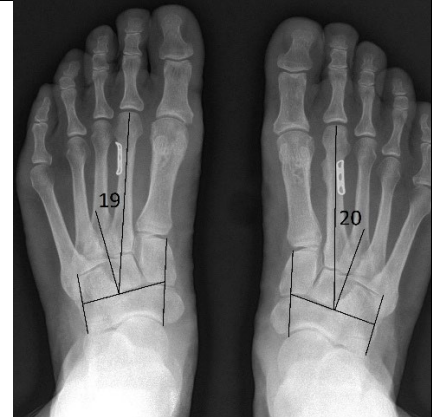
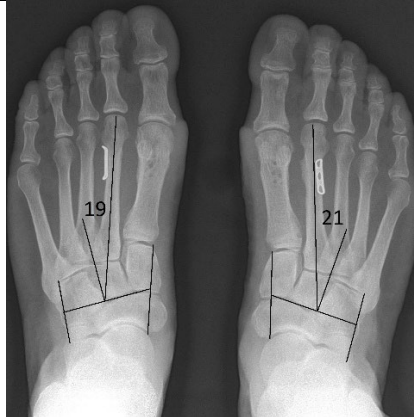
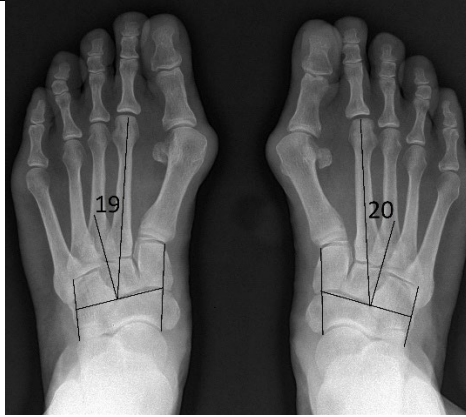
Case# 1695

Pre - Op

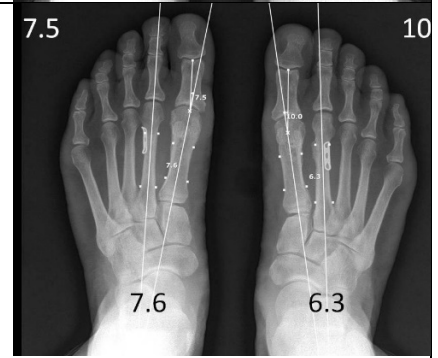
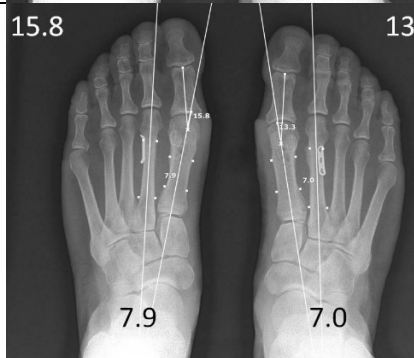
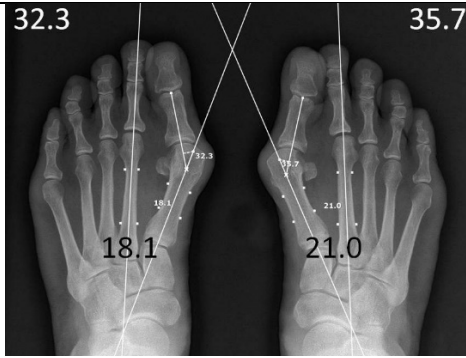
6-month post-op

12-month post-op

**M
A
A**



**I
M
A
&
M
P
A**

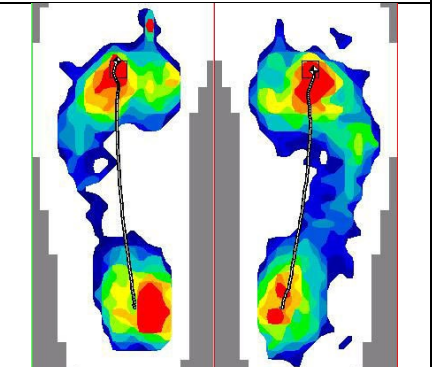


Top View Photo

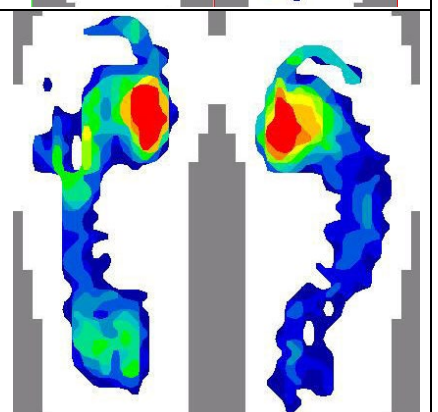
Callus View Photo

F-Scan

**P
R
E**



**P
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S
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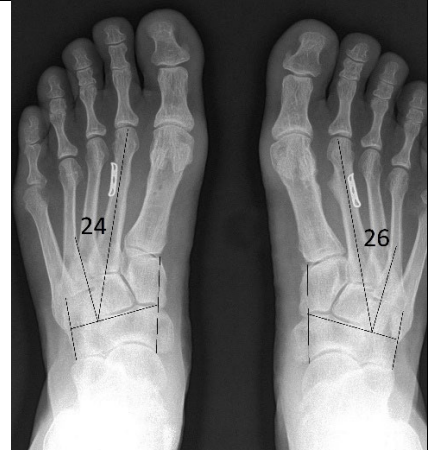
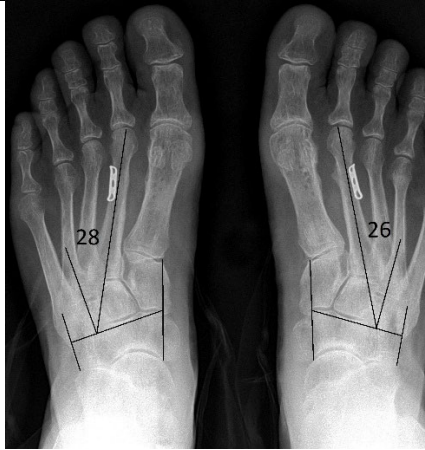
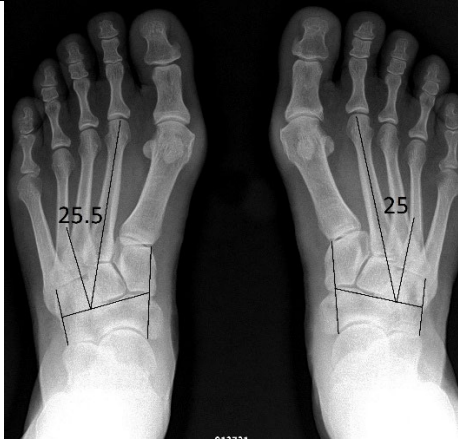
Case# 1696

Pre - Op

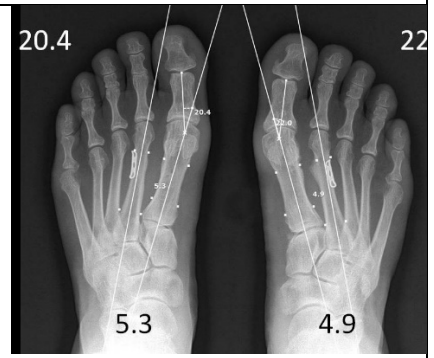
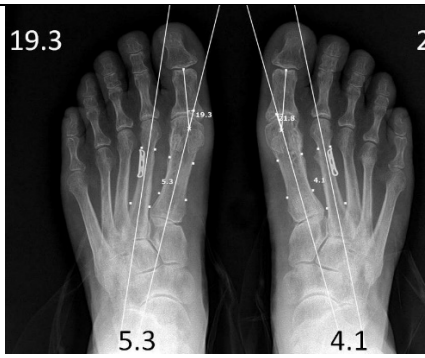
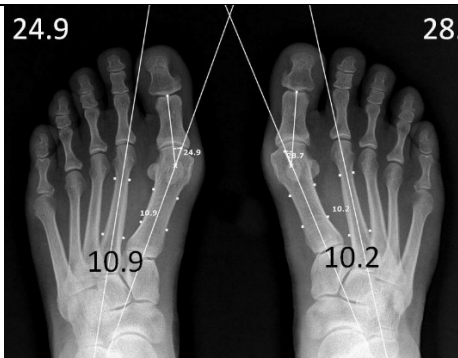
6-month post-op

24-month post-op

**M
A
A**



**I
M
A
&
M
P
A**

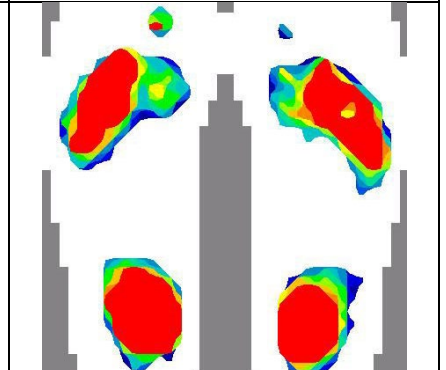


Top View Photo

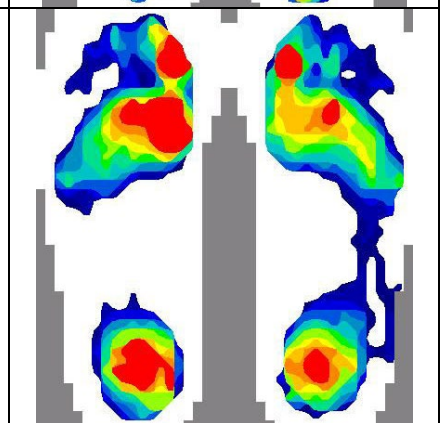
Callus View Photo

F-Scan

**P
R
E**



**P
O
S
T**



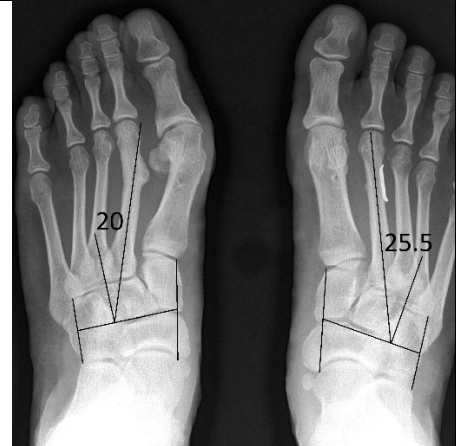
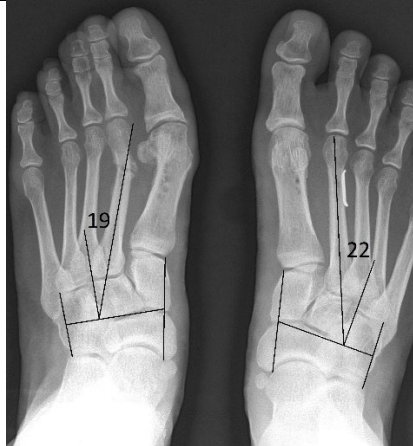
Case# 1697, Lt foot exclusion for 2nd Mt stress fx

Pre - Op

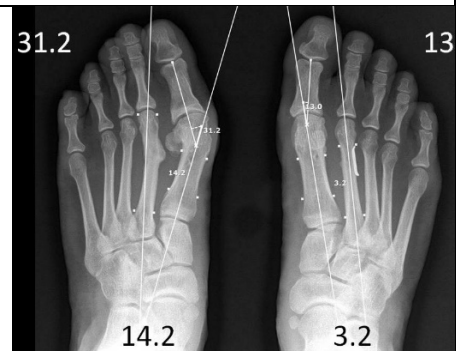
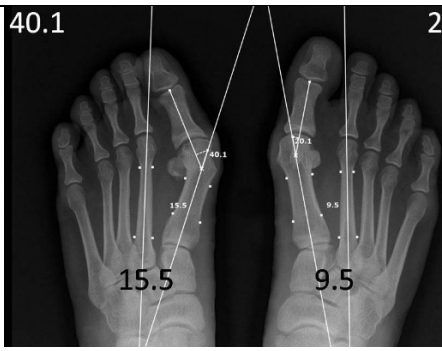
6-month post-op

24-month post-op

**M
A
A**



**I
M
&
M
P
A**

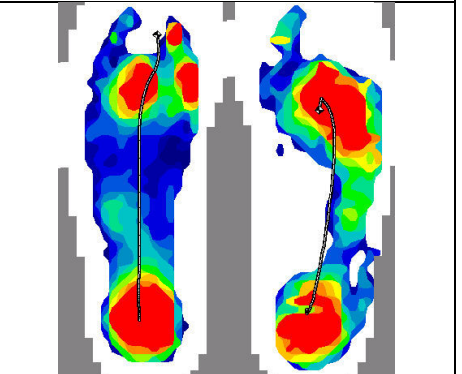


Top View Photo

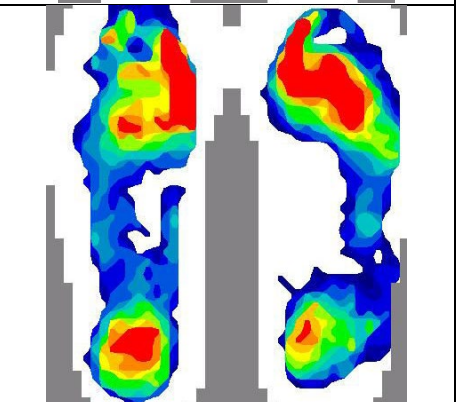
Callus View Photo

F-Scan





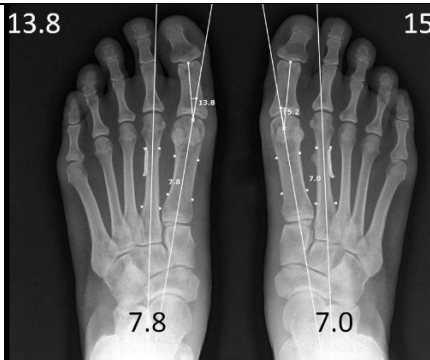
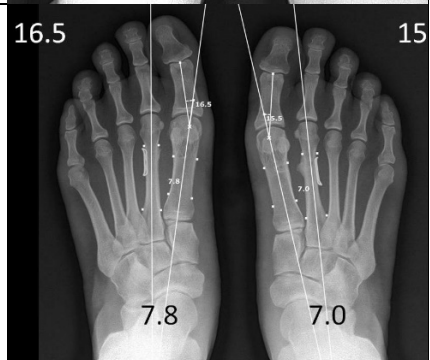


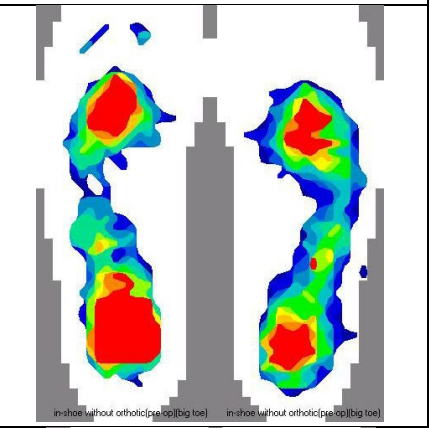


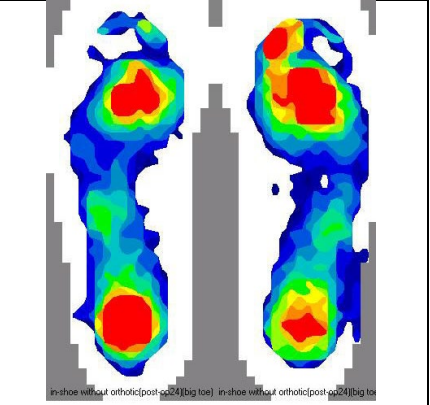
**P
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**P
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Case# 1698

	Pre - Op	6-month post-op	24-month post-op
M A A			
I M A & M P A			
	Top View Photo	Callus View Photo	F-Scan
P R E			
P O S T			

Case# 1699 (Rt foot only)

	Pre - Op	6-month post-op	24-month post-op
M A A			
I M A & M P A			
	Top View Photo	Callus View Photo	F-Scan
P R E			
P O S T			

		Case# 1700					
		Pre - Op		6-month post-op		24-month post-op	
M A A							
		Top View Photo		Callus View Photo		F-Scan	
P R E							

Case# 1701 (an excluded overseas case)

Pre – Op

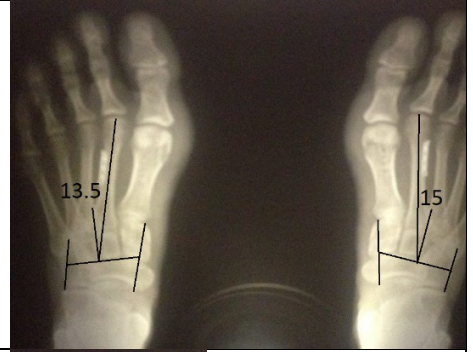
6-month post-op

2-weeks post-op

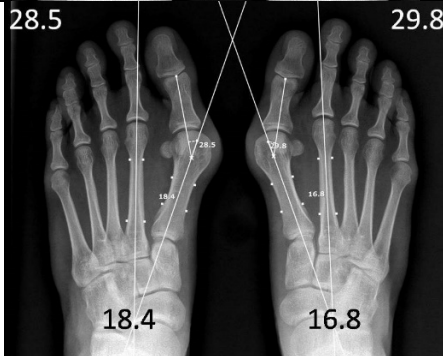
**M
A
A**



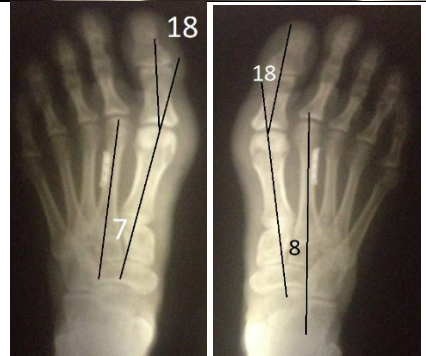
NA



**I
M
A
&
M
P
A**



NA

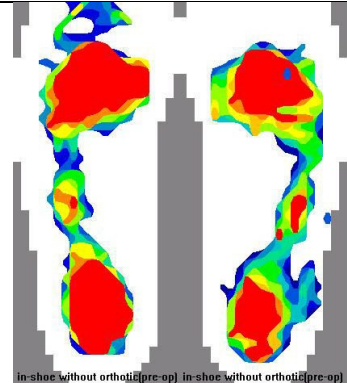


Top View Photo

Callus View Photo

F-Scan

**P
R
E**

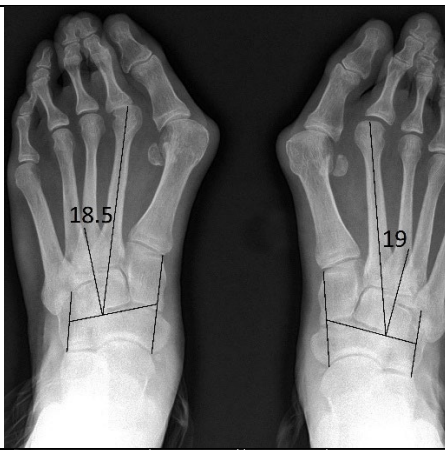
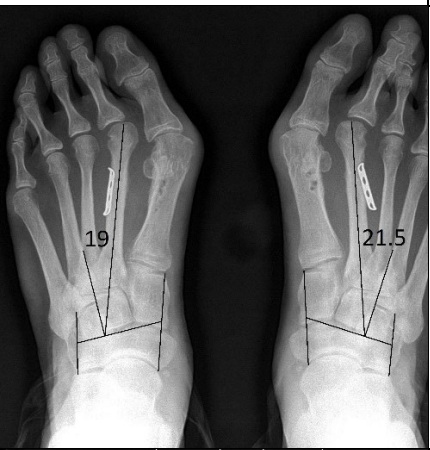

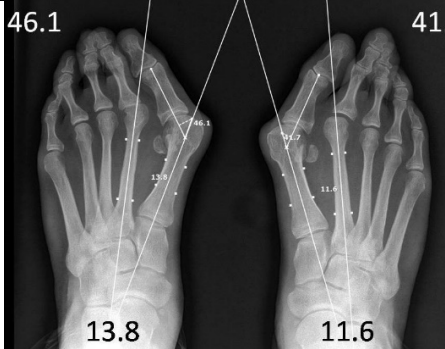
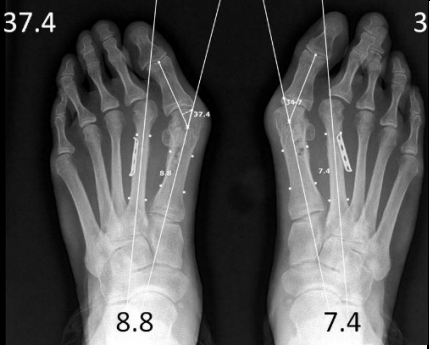
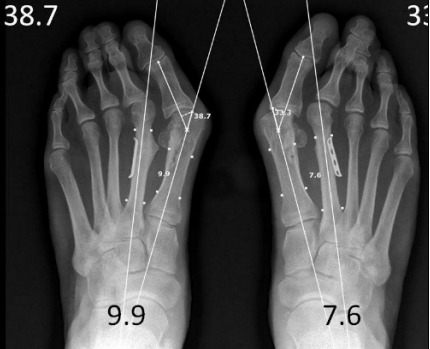


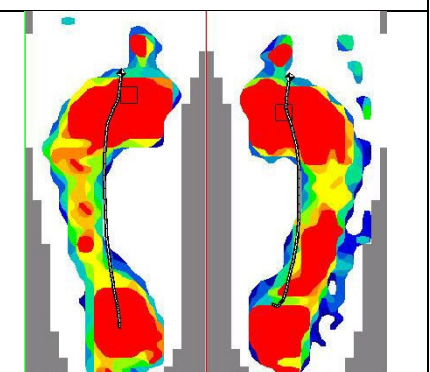


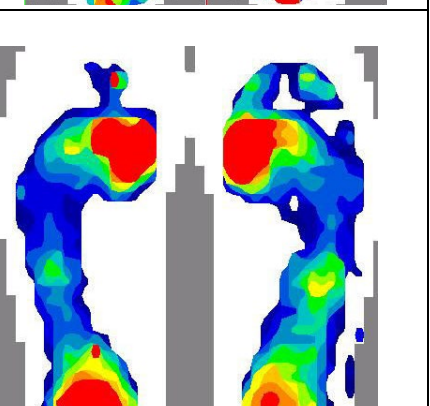


**P
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S
T**



NA

NA




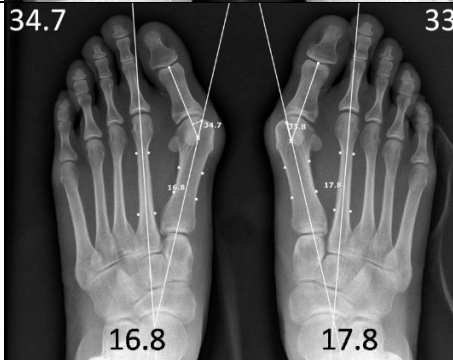
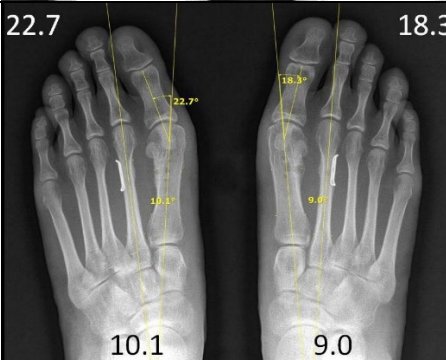
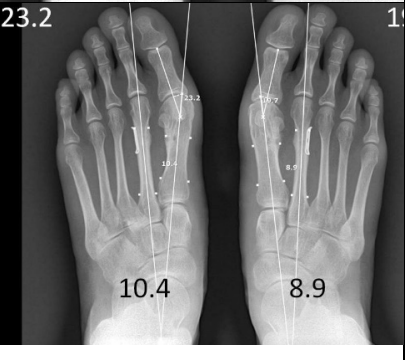


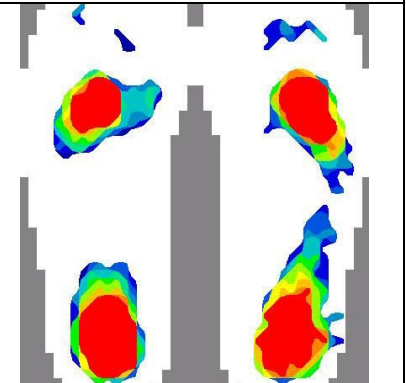


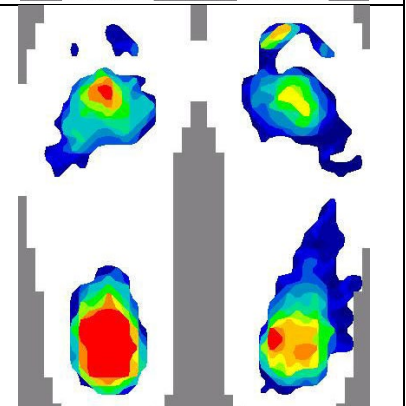
Case# 1702						
Pre – Op		6-month post-op		24-month post-op		
M A A						
						
	Top View Photo		Callus View Photo		F-Scan	
P R E						
						

Case# 1703 (Rt foot only)

	Pre – Op	6-month post-op	12-month post-op
M A A			
I M A & M P A			
	Top View Photo	Callus View Photo	F-Scan
P R E			
P O S T			

Case# 1704			
	Pre – Op	6-month post-op	12-month post-op
M A A			
I M A & M P A			
	Top View Photo	Callus View Photo	F-Scan
P R E			
P O S T			

		Case# 1705					
		Pre – Op		6-month post-op		24-month post-op	
M A A							
		Top View Photo		Callus View Photo		F-Scan	
P R E							
P O S T							

		Case# 1706		
		Pre – Op	6-month post-op	24-month post-op
M A A				
				
		Top View Photo	Callus View Photo	F-Scan
P R E				
				

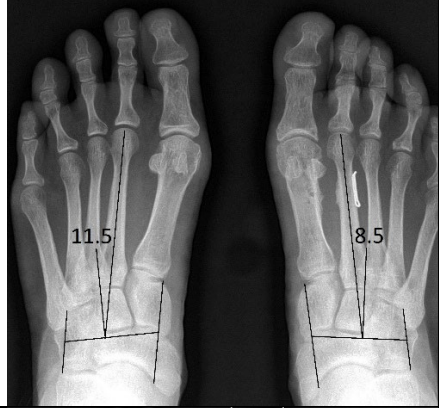
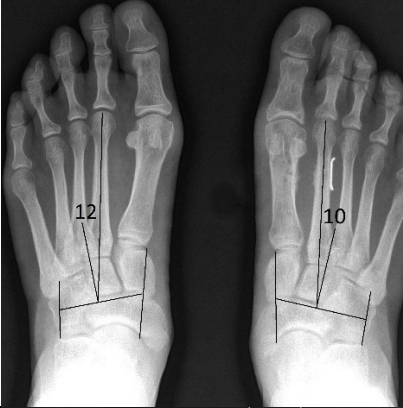
Case# 1707(Rt foot only)

Pre – Op

6-month post-op

12-month post-op

**M
A
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**I
M
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&
M
P
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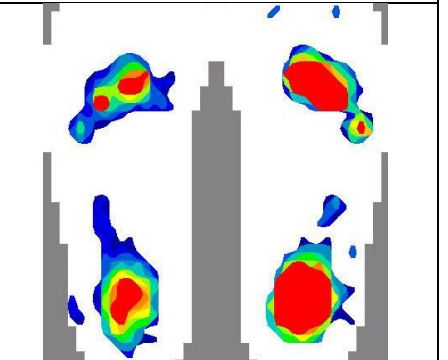


Top View Photo

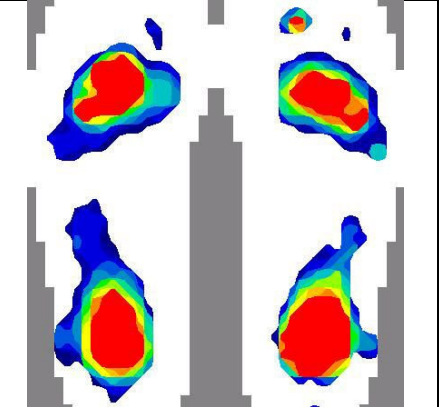
Callus View Photo

F-Scan

**P
R
E**



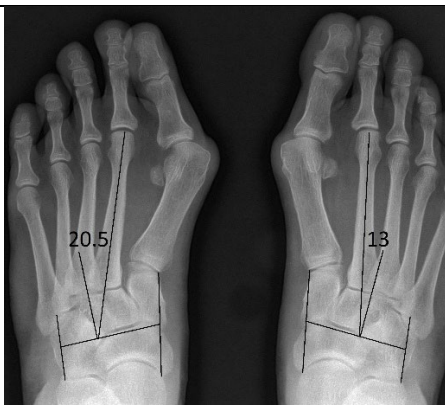
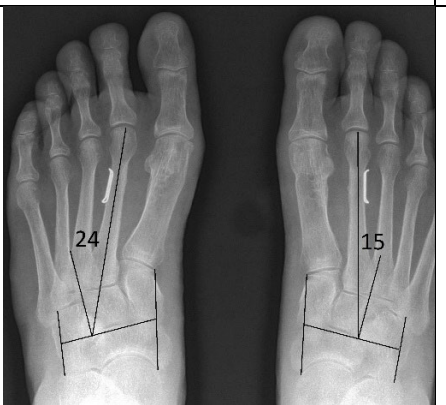
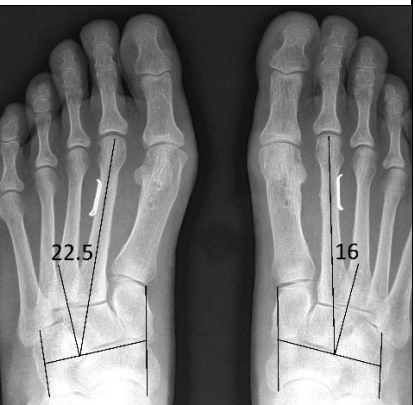
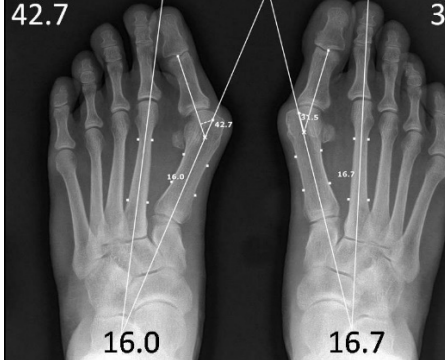
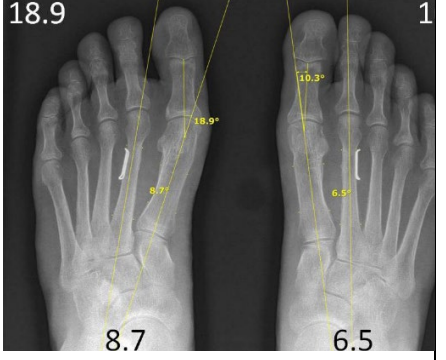
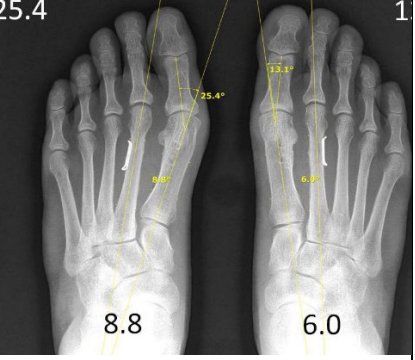


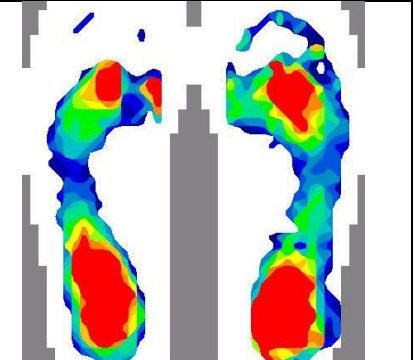


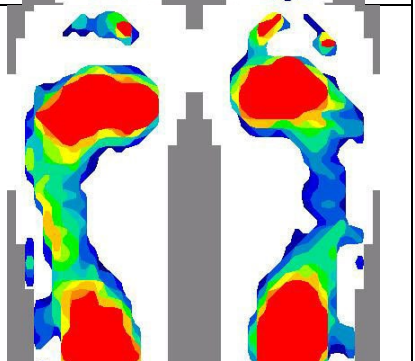
**P
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		Case# 1708					
		Pre – Op		6-month post-op		24-month post-op	
M A A							
		Top View Photo		Callus View Photo		F-Scan	
P R E							


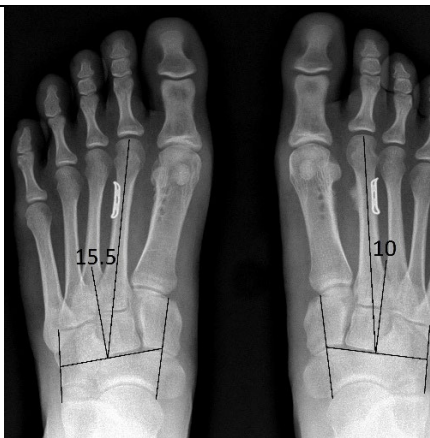
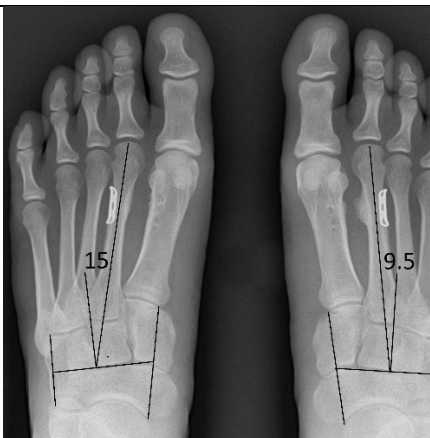
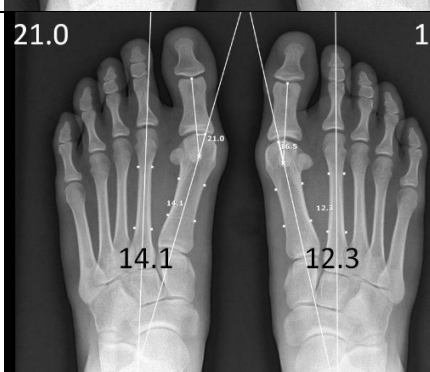
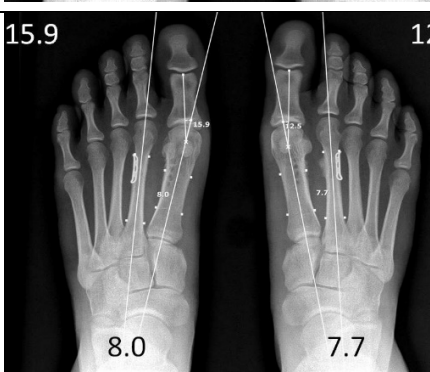
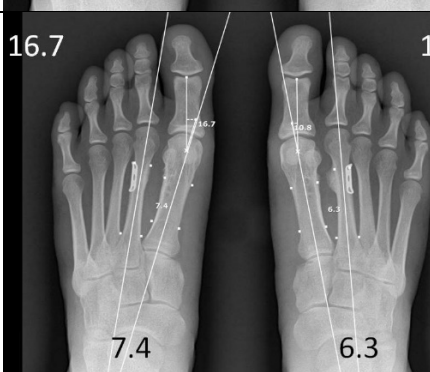


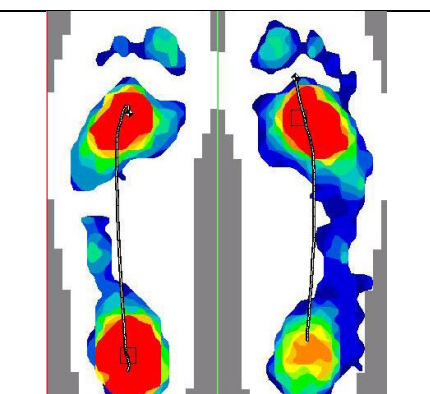

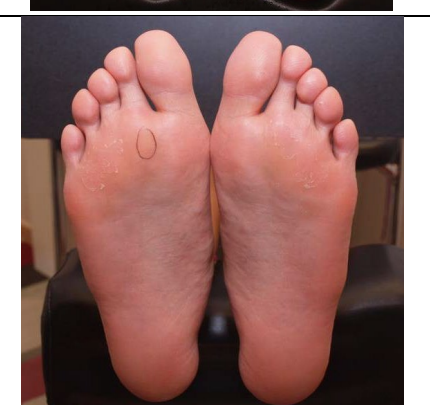
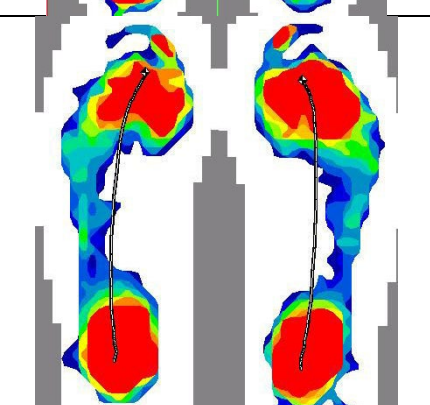
		Case# 1709		
		Pre – Op	6-month post-op	24-month post-op
M A A				
	I M A & M P A			
		Top View Photo	Callus View Photo	F-Scan
P R E				
	P O S T			

		Case# 1710					
		Pre – Op		6-month post-op		12-month post-op	
M A A							
		Top View Photo		Callus View Photo		F-Scan	
P R E							

		Case# 1711					
		Pre – Op		6-month post-op		12-month post-op	
M A A							
	I M A & M P A						
		Top View Photo		Callus View Photo		F-Scan	
P R E							
	P O S T						

		Case# 1712					
		Pre – Op		6-month post-op		24-month post-op	
M A A							
	I M A & M P A						
			Top View Photo		Callus View Photo		F-Scan
P R E							
P O S T							

		Case# 1713					
		Pre – Op		6-month post-op		12-month post-op	
M A A							
		Top View Photo		Callus View Photo		F-Scan	
P R E							

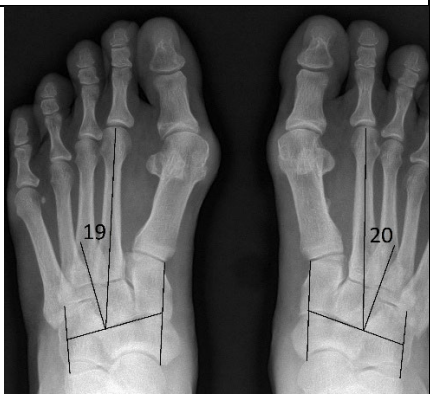
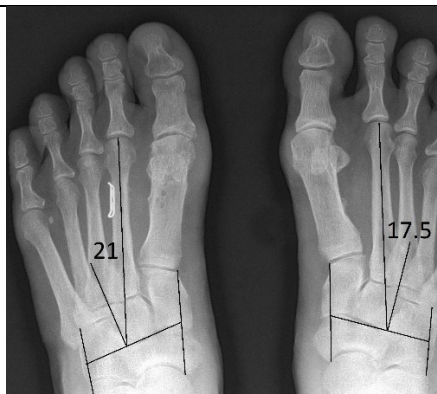
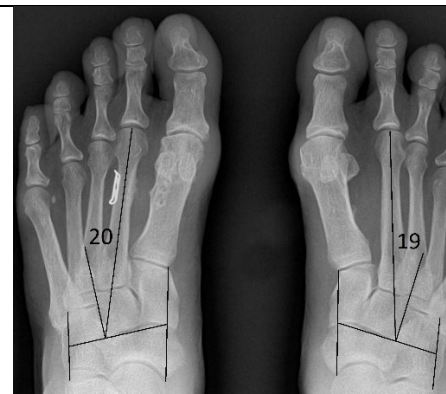
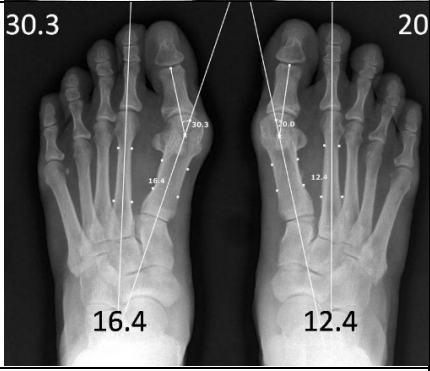




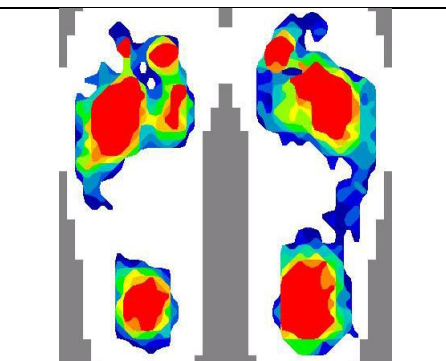


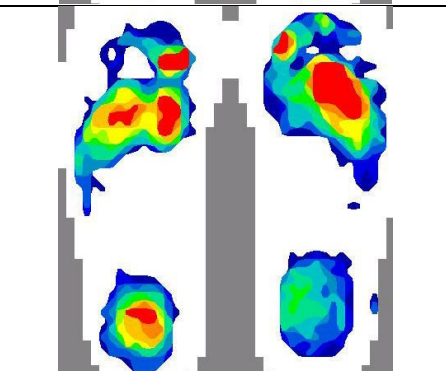
		Case# 1714		
		Pre – Op	6-month post-op	24-month post-op
M A A				
				
		Top View Photo	Callus View Photo	F-Scan
P R E				
				

		Case# 1715					
		Pre – Op		6-month post-op		24-month post-op	
M A A							
		Top View Photo		Callus View Photo		F-Scan	
P R E							

		Case# 1716					
		Pre – Op		6-month post-op		24-month post-op	
M A A							
	I M A & M P A						
		Top View Photo		Callus View Photo		F-Scan	
P R E							
	P O S T						



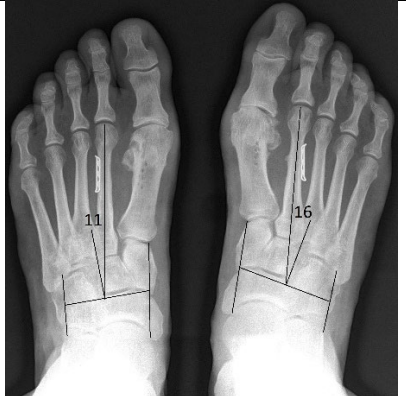
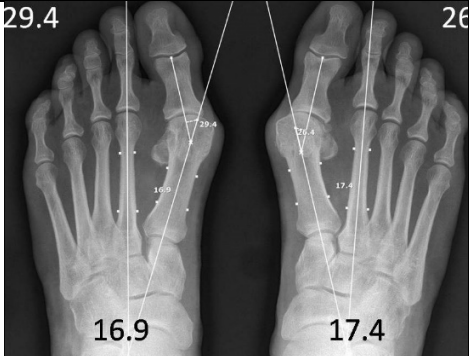

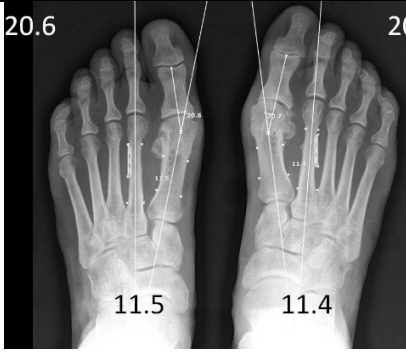


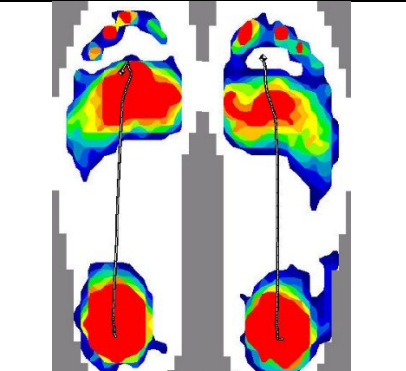


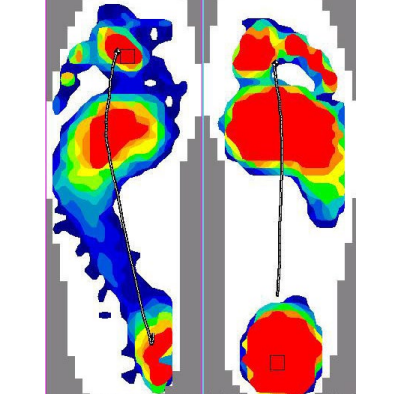
		Case# 1717					
		Pre – Op		6-month post-op		24-month post-op	
M A A							
		Top View Photo		Callus View Photo		F-Scan	
P R E							

Case# 1718 (Lt foot only)

	Pre – Op	6-month post-op	24-month post-op
M A A			
I M A & M P A			
	Top View Photo	Callus View Photo	F-Scan
P R E			
P O S T			

		Case# 1719					
		Pre – Op		6-month post-op		24-month post-op	
M A A							
		Top View Photo		Callus View Photo		F-Scan	
P R E							

		Case# 1720					
		Pre – Op		6-month post-op		24-month post-op	
M A A							
		Top View Photo		Callus View Photo		F-Scan	
P R E							

		Case# 1721		
		Pre – Op	6-month post-op	12-month post-op
M A A				
				
		Top View Photo	Callus View Photo	F-Scan
P R E				
				

		Case# 1722					
		Pre – Op		6-month post-op		24-month post-op	
M A A							
		Top View Photo		Callus View Photo		F-Scan	
P R E							

Case# 1723 (Lt foot only)

	Pre – Op	6-month post-op	24-month post-op
M A A			
I M A & M P A			
	Top View Photo	Callus View Photo	F-Scan
P R E			
P O S T			

		Case# 1724					
		Pre – Op		6-month post-op		24-month post-op	
M A A							
		Top View Photo		Callus View Photo		F-Scan	
P R E							
P O S T							

Case# 1725, Rt foot exclusion for 2nd Mt stress fx

Pre – Op

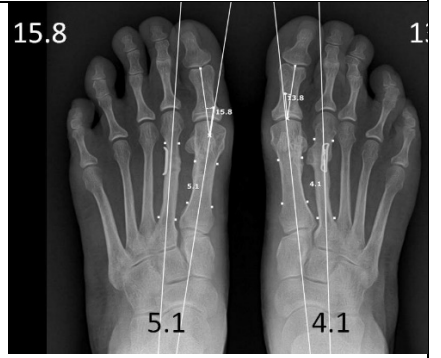
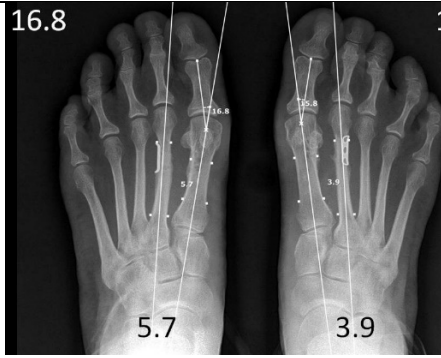
6-month post-op

24-month post-op

**M
A
A**



**I
M
A
&
M
P
A**

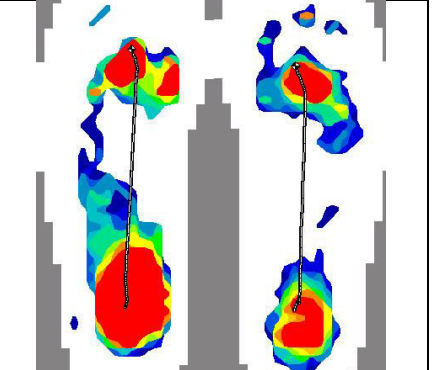


Top View Photo

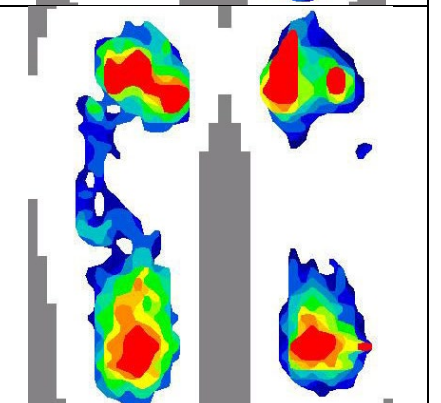
Callus View Photo

F-Scan

**P
R
E**


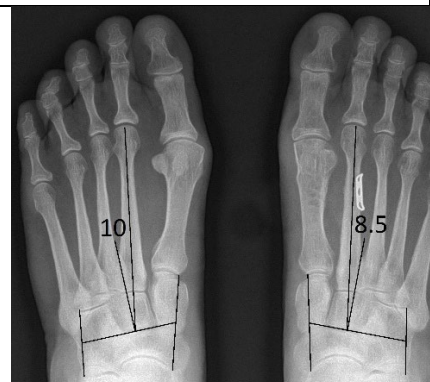
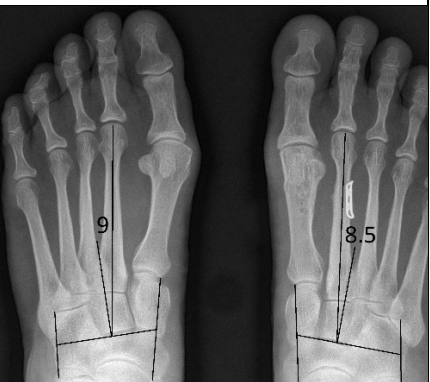
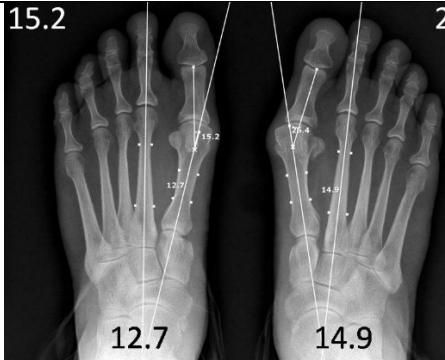




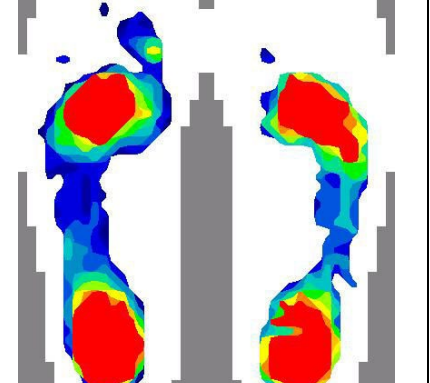


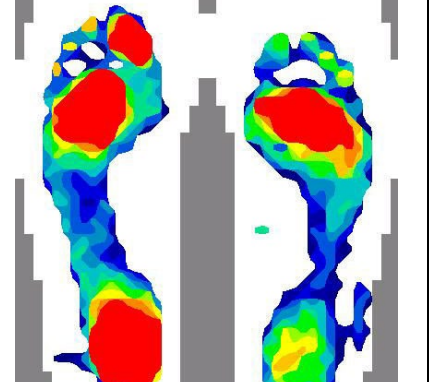


**P
O
S
T**

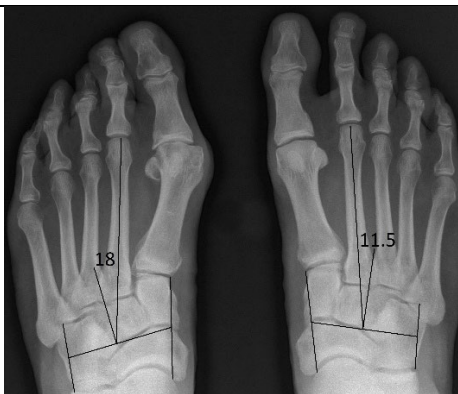

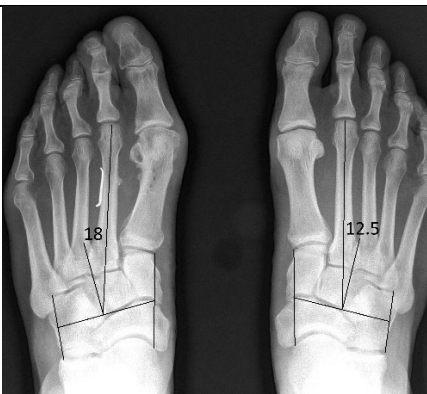
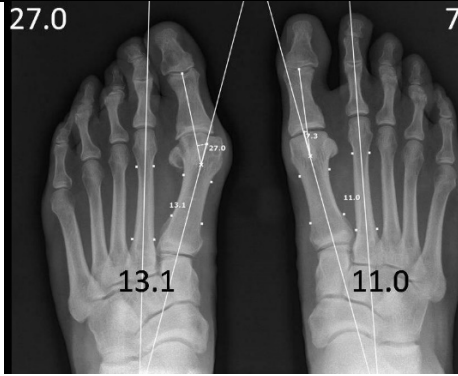




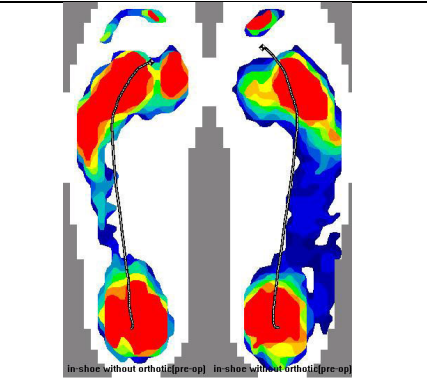




Case# 1726			
	Pre – Op	6-month post-op	24-month post-op
M A A			
I M A & M P A			
	Top View Photo	Callus View Photo	F-Scan
P R E			
P O S T			

Case# 1727 (Rt foot only)


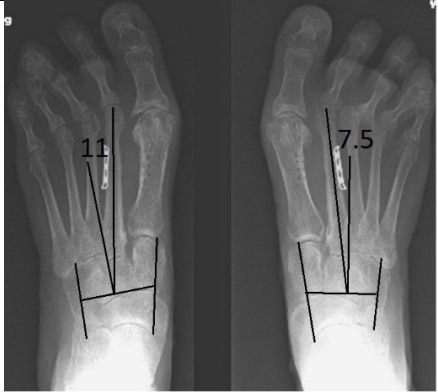
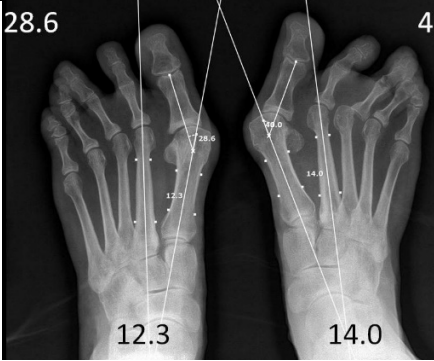



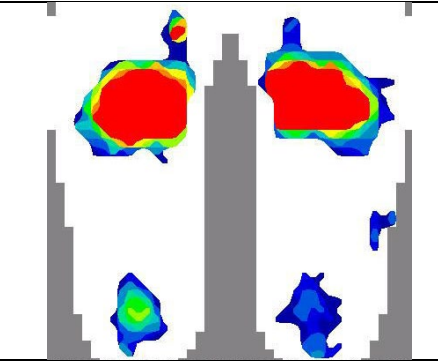


	Pre – Op	6-month post-op	12-month post-op
M A A			
I M A & M P A			
	Top View Photo	Callus View Photo	F-Scan
P R E			
P O S T			

Case# 1728 (Lt foot only)

	Pre – Op	6-month post-op	12-month post-op
M A A			
I M A & M P A			
	Top View Photo	Callus View Photo	F-Scan
P R E			
P O S T			NA

Case# 1729			
Pre – Op		6-month post-op	24-month post-op
M A A			
	Top View Photo	Callus View Photo	F-Scan
P R E			

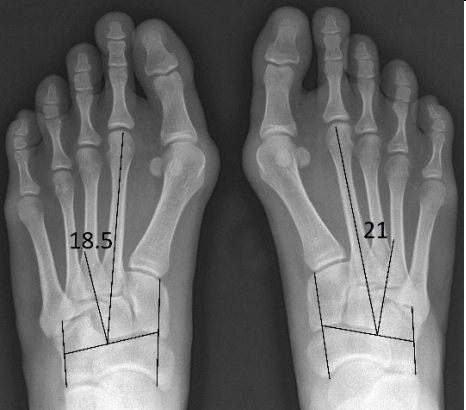
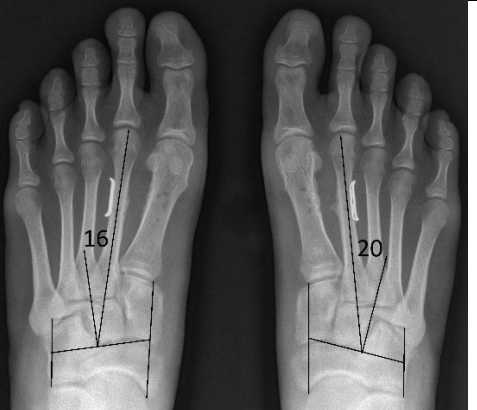
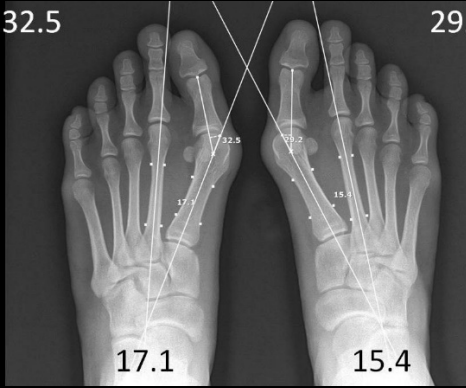
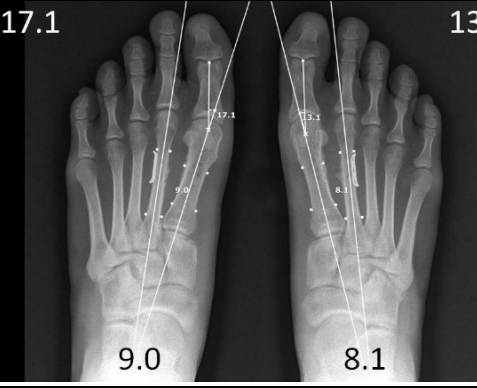


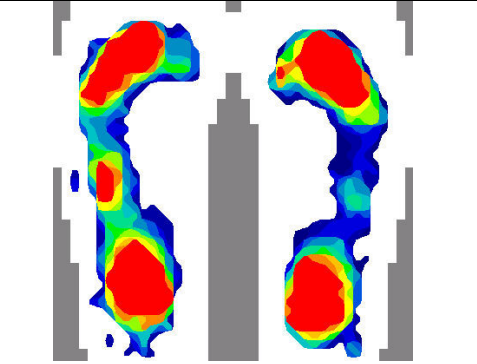

		Case# 1730		
		Pre – Op	6-month post-op	24-month post-op
M A A				
		Top View Photo	Callus View Photo	F-Scan
P R E				

Case# 1731			
	Pre – Op	6-month post-op	12-month post-op
M A A		NA	
I M A & M P A		NA	
	Top View Photo	Callus View Photo	F-Scan
P R E			
P O S T			NA Overseas patient

		Case# 1732					
		Pre - Op		6-month post-op		24-month post-op	
M A A							
	I M A & M P A						
		Top View Photo		Callus View Photo		F-Scan	
P R E							
	P O S T						

		Case# 1733					
		Pre - Op		6-month post-op		24-month post-op	
M A A							
		Top View Photo		Callus View Photo		F-Scan	
P R E							

				Case# 1734					
		Pre - Op		6-month post-op		6-month post-op			
M A A									
	I M A & M P A								
Top View Photo		Callus View Photo		F-Scan					
P R E									
	P O S T								

Case# 1735 (an excluded case)			
	Pre - Op	6-month post-op	5-month post-op
M A A		NA	
I M A & M P A		NA	
	Top View Photo	Callus View Photo	F-Scan
P R E			
P O S T		NA	NA

		Case# 1736					
		Pre - Op		6-month post-op		24-month post-op	
M A A							
I M A & M P A							
		Top View Photo		Callus View Photo		F-Scan	
P R E							
P O S T							

Case# 1737 (Rt foot only)

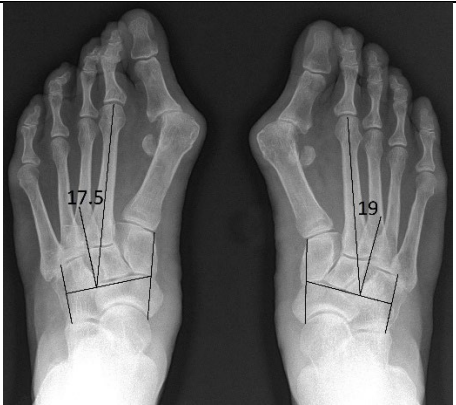
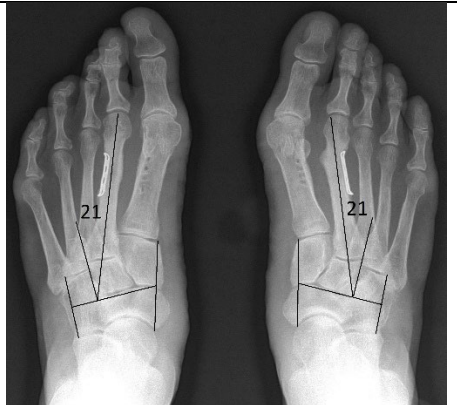
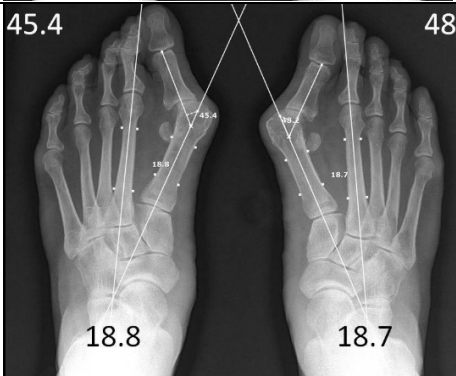





	Pre - Op	6-month post-op	24-month post-op
M A A			
I M A & M P A			
	Top View Photo	Callus View Photo	F-Scan
P R E			
P O S T			

		Case# 1738		
		Pre - Op	6-month post-op	24-month post-op
M A A				
		Top View Photo	Callus View Photo	F-Scan
P R E				

		Case# 1739					
		Pre - Op		6-month post-op		24-month post-op	
M A A							
		Top View Photo		Callus View Photo		F-Scan	
P R E							

		Case# 1740		
		Pre - Op	6-month post-op	24-month post-op
M A A				
		Top View Photo	Callus View Photo	F-Scan
P R E				




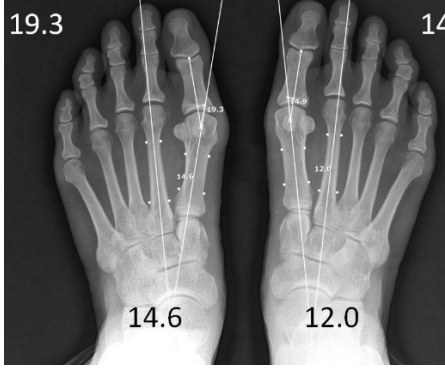

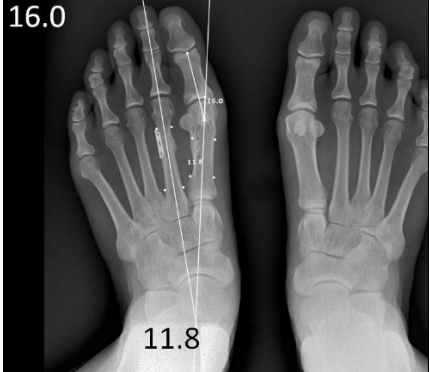


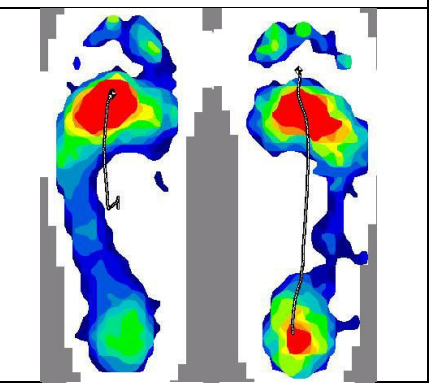


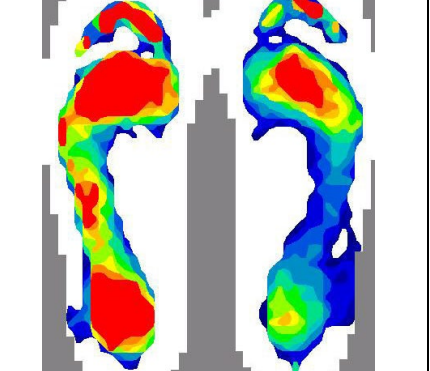
		Case# 1741					
		Pre - Op		6-month post-op		24-month post-op	
M A A							
		Top View Photo		Callus View Photo		F-Scan	
P R E							

Case# 1742, Rt foot exclusion for 2 nd Mt stress fx			
Pre - Op		6-month post-op	11-month post-op
M A A		NA	
I M A & M P A		NA	
Top View Photo		Callus View Photo	F-Scan
P R E			NA
P O S T			NA

Case# 1743 (Rt foot only)

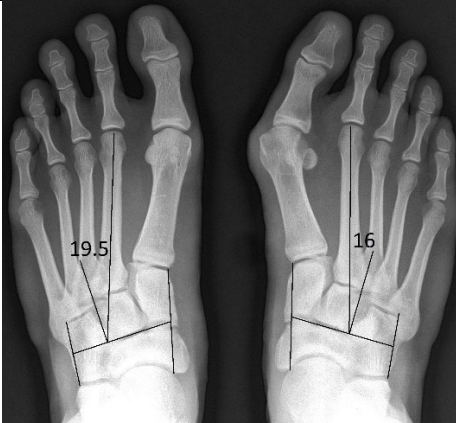
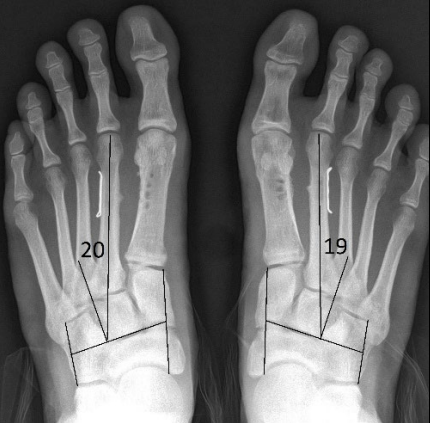


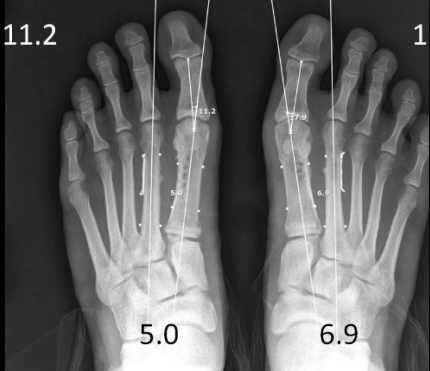
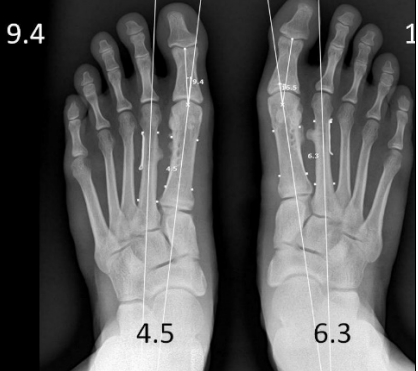

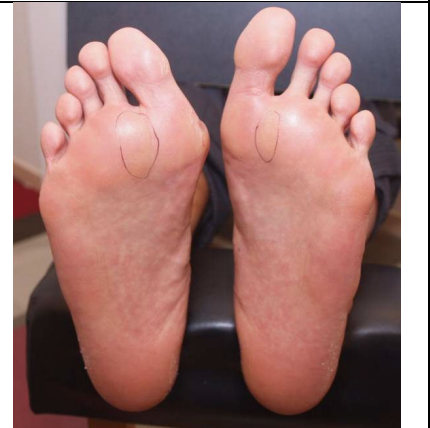
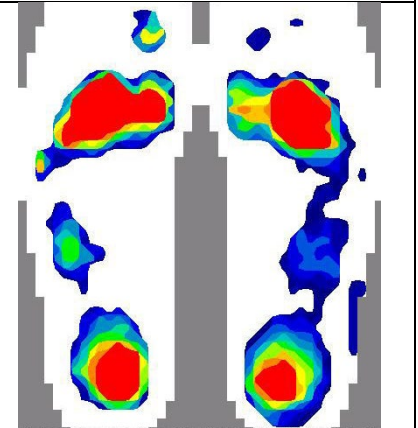

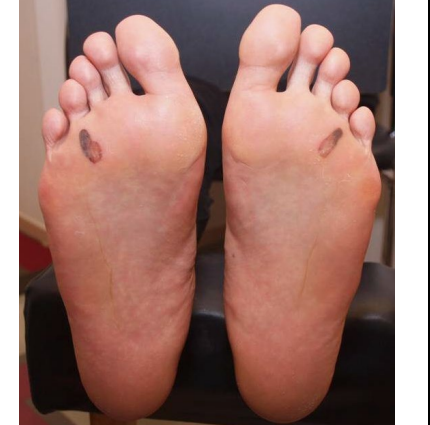
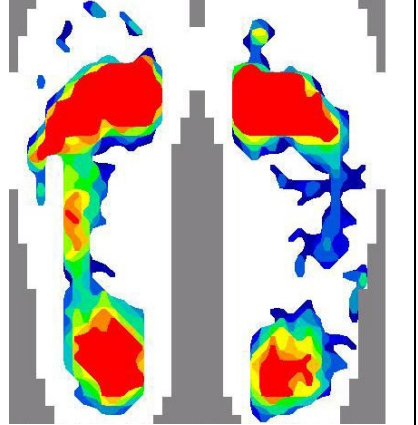
	Pre - Op	6-month post-op	24-month post-op
M A A			
I M A & M P A			
	Top View Photo	Callus View Photo	F-Scan
P R E			
P O S T			

Case# 1744 (Lt foot only)

	Pre - Op	6-month post-op	24-month post-op
M A A			
I M A & M P A			
	Top View Photo	Callus View Photo	F-Scan
P R E			
P O S T			

Case# 1745				
		Pre - Op	6-month post-op	24-month post-op
M A A				
	I M A & M P A			
		Top View Photo	Callus View Photo	F-Scan
P R E				
	P O S T			

		Case# 1746					
		Pre - Op		6-month post-op		24-month post-op	
M A A							
		Top View Photo		Callus View Photo		F-Scan	
P R E							
P O S T							

		Case# 1747					
		Pre - Op		6-month post-op		24-month post-op	
M A A							
							
		Top View Photo		Callus View Photo		F-Scan	
P R E							
							

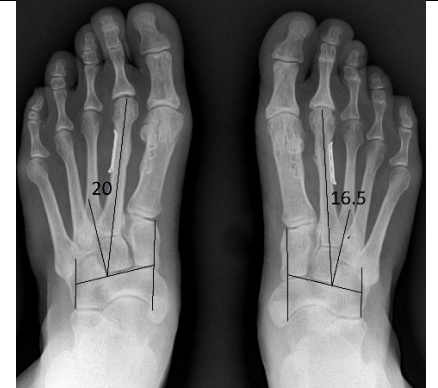
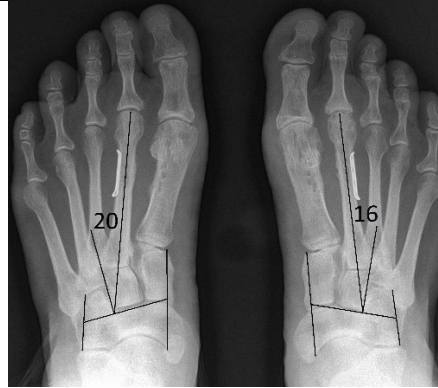
Case# 1748

Pre - Op

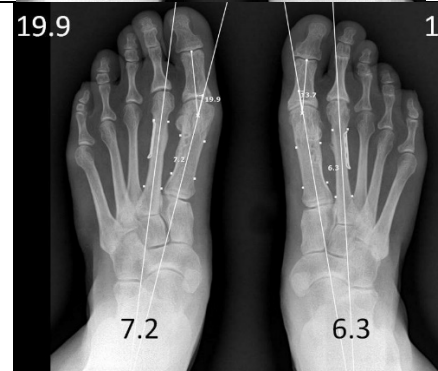
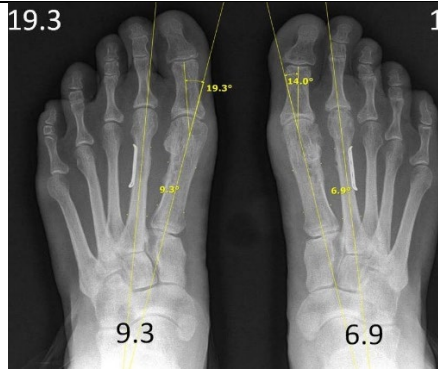
6-month post-op

24-month post-op

M
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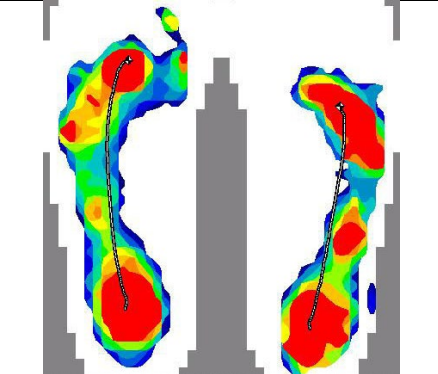


Top View Photo

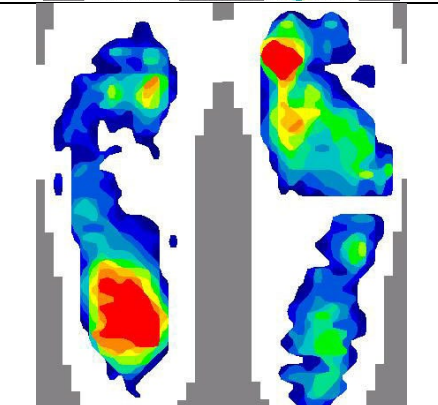
Callus View Photo

F-Scan

P
R
E



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		Case# 1749					
		Pre - Op		6-month post-op		12-month post-op	
M A A							
		Top View Photo		Callus View Photo		F-Scan	
P R E							

Case# 1750 (Lt foot only)

	Pre - Op	6-month post-op	12-month post-op
M A A			
I M A & M P A			
	Top View Photo	Callus View Photo	F-Scan
P R E			
P O S T			

Table i.

Case #	Side	Age, yrs	Follow-up time, mths	Sgarlato's MAA, °			IMA, °			MPA, °		
				Preop	6 mths post	Final	Preop	6 mths post	Final	Preop	6 mths post	Final
1678	R	35	18	15	17.5	17	15.9	-	10.2	29.5	-	20.7
1679	R	52	6	16	18.5	18.5	17.7	7.5	7.5	29.3	16.1	16.1
1680	R	75	12	28	30	29	9.2	8.9	7.7	37.8	38.9	34.1
1681	L	55	24	15	15	15	15.8	10.1	8.7	31.4	20.5	23.9
	R			17.5	18	18	10.4	7	5.5	20.2	18.2	18
1682	L	45	24	16	18	17	11.1	6.2	3.7	26.4	18.2	15.4
	R			20	23	22.5	9.6	4	2.2	28.7	20.2	13.3
1683	L	37	24	8	10	11.5	19.5	9.4	9.3	35.5	12.7	17.6
	R	39		6	9	7.5	16.3	7.8	6.7	30.6	15.4	14.1
1684	L	44	24	11.5	12	12	12.3	7.4	7.8	22.7	14.5	12.9
	R			13.5	16	15.5	12	6.8	5.8	18.6	9.2	8.3
1685	R	41	12	15	18.5	20	16.8	8	8.1	45.6	20.9	24.3
1686	L	29	24	11	11.5	12	10.2	6.8	5	27.7	17.8	16.3
1687	R	51	24	19	20	20	18.5	9.5	7.1	43.9	19.9	22.7
1688	L	49	24	18	18	16	15.3	7.1	7.6	35.6	24.4	23.9
	R			15	18.5	17	13.7	6.5	7	35.4	23.4	23.6
1689	L	66	36	19	18	20	16.6	9.8	8.4	38.3	23.4	28.9
	R			17.5	19	18	12	9.8	6.6	22	17.8	12.5
1690	L	29	24	15	18	17	18	9.4	11.7	38.6	24.4	26.2
	R			11.5	14.5	16	11.5	8.1	6.2	25.1	15.9	13.2
1691	L	44	12	19	22.5	23	18.6	12.5	12.5	46.2	31.9	29.7
	R			15	19.5	17	19.4	12.8	12.2	49.1	31.2	32.5
1692	L	56	24	28	28	29	9.3	4.7	1.3	26.1	20.9	19.6
1693	L	59	6	4	6.5	6.5	18.4	9.6	9.6	36.7	19.6	19.6
	R			8.5	9.5	9.5	17.6	9	9	41.9	23.9	23.9
1694	L	59	12	22.5	26.5	26.5	14.1	7.3	7.1	43.2	25.9	23.5
	R			23	25.5	25	10.2	8	6.7	24.7	20.2	20
1695	L	62	12	19	19	19	18.1	7.9	7.6	32.3	15.8	7.5
	R			20	21	20	21	7	6.3	35.7	13.3	10
1696	L	53	24	25.5	28	24	10.9	5.3	5.3	24.9	19.3	20.4

	R			25	26	26	10.2	4.1	4.9	28.7	21.8	22
1697	R	47	24	23	22	25.5	9.5	3.9	3.2	20.1	8.7	13
1698	L	31	24	18	17	17	13.6	7.8	7.8	24.4	13.8	16.5
	R			18.5	17	19	11.6	7	7	23.1	15.2	15.5
1699	R	33	24	11	11	11	14.4	8	8.4	23.7	17.3	13.9
1700	L	34	24	15.5	17	15	15.8	7.2	6.7	33.8	22.2	21.8
	R			16.5	18	18	12.9	5.7	5.8	29.2	19.3	19.6
1702	L	61	24	18.5	19	17	13.8	8.8	9.9	46.1	37.4	38.7
	R			19	21.5	21.5	11.6	7.4	7.6	41.7	34.7	33.3
1703	R	48	12	0	-1	0	13.4	8.3	7.8	21.5	14.9	16.8
1704	L	60	12	8.5	13	11	18	7.1	9	31.4	16.7	15.9
	R			9.5	10	11	18.2	8.8	8.7	32.9	14	14.3
1705	L	65	24	16	21	20	17.5	7.7	9.3	43.4	20.6	20.9
	R			15	19	18.5	15.6	6.6	7.3	35.7	24.9	26.1
1706	L	25	24	9	9.5	9	16.8	10.1	10.4	34.7	22.7	23.2
	R			8	8.5	8.5	17.8	9	8.9	33.8	18.3	19.7
1707	R	54	12	9.5	10	8.5	13.5	5.6	5.5	31.4	14.6	14.5
1708	L	16	24	23	23	23	9	4.4	3.2	27.5	22.4	19.7
	R			18	21.5	18	9.2	4.5	5.2	22.2	16.9	19.9
1709	L	64	24	13	16	16	15.6	6.2	6.6	39.9	20.4	22.8
	R			11.5	12	12.5	13.4	5.5	3.9	25	11.5	11.9
1710	L	20	12	21	23	21.5	13.8	4.8	8.1	34.7	24.1	26.8
	R			16	21	19	10.9	4.8	6.6	25	20.9	16.9
1711	L	54	12	20.5	24	22.5	16	8.7	8.8	42.7	18.9	25.4
	R			13	15	16	16.7	6.5	6	31.5	10.3	13.1
1712	L	35	24	15.5	19.5	19	20.2	9.8	9.5	37.9	21.3	18.7
	R			16	18.5	17	18.8	8.3	8.1	31.3	17.6	23
1713	L	49	12	15	15	16	13	11.8	8	21.5	21.1	16.9
	R			13	15	14.5	15.9	9	7.3	21.1	13.3	13
1714	L	16	24	13.5	15.5	15	14.1	8	7.4	21	15.9	16.7
	R			9	10	9.5	12.3	7.7	6.3	16.5	12.5	10.8
1715	L	59	24	17	20	18	13	4.6	5	27.9	8.8	4.8
	R			14.5	17.5	17	14	6.3	5.6	35.9	18.1	16.3
1716	L	17	24	10.5	12	14	14.6	6.8	6.5	26.2	13.8	12.9
	R			12.5	13.5	13	15.3	8.6	9.9	34	21.8	21.2

1717	L	44	24	14.5	18	17	12.3	7.1	6.7	25.9	16.5	13.5
	R			12	13.5	13	15.8	8	6.7	25.3	15.3	15.8
1718	L	67	24	19	21	20	16.4	8.2	6.8	30.3	14.2	13.5
1719	L	55	24	22	23	23	16.6	8.5	8.7	41.8	28.9	33.4
	R			20	20.5	20.5	17.4	7.7	7.7	46.3	28.6	32.8
1720	L	53	24	18	21	19	10.7	6	5.8	32.9	19.9	21.8
	R			18	19	20	10.9	5.5	5.3	37.6	22.9	24.7
1721	L	66	12	10.5	12	11	16.9	12.3	11.5	29.4	21.7	20.6
	R			13.5	15	16	17.4	11.5	11.4	26.4	20.8	20.7
1722	L	68	24	15	17	16	16.4	8.1	8.9	31.5	18.4	17.4
	R			21	21	22	9.8	6.8	7.1	17.1	11.2	14.3
1723	L	38	24	16	17	17	11.1	6.1	7	25.8	12.4	9.9
1724	L	36	24	25	27	26.5	15.6	7.2	7.6	35.4	23.2	22.7
	R			24	26.5	24	15.4	5.5	6	36.3	18.3	20.8
1725	L	60	24	16.5	17	16	8.4	5.7	5.1	28	16.8	15.8
1726	L	52	24	15.5	16	16	13.8	8.7	8.6	31.4	27	19.8
	R			16.5	16.5	17.5	15.9	8.1	7.3	21.4	15.4	11.1
1727	R	57	12	7	8.5	8.5	14.9	6.2	7.2	26.4	8.4	7.7
1728	L	69	12	18	18	18	13.1	8.9	8.7	27	22.1	22.6
1729	L	57	24	18.5	21	19	11.8	4.2	2.1	37.5	16.3	14.6
	R			18.5	19.5	20	9.9	2.9	1.5	37.2	13	13.6
1730	L	36	24	17.5	17	17	17	8.9	7.6	37.2	21.1	21.2
	R			15.5	17.5	16.5	14.2	8.8	8.5	23.3	16.5	14.2
1731	L	56	12	11	-	11	12.3	-	7.7	28.6	-	21.7
	R			11.5	-	7.5	14	-	6.6	40	-	22.8
1732	L	57	24	20	24	22	19	8	6.5	33.7	19.8	19.1
	R			21.5	25	25	22.4	6.3	5.2	43	17	17.7
1733	L	44	24	9.5	14	14	17.2	6.9	8.2	35.2	19	21.3
	R			10	14	15	14.7	8.4	7.7	32.8	19.6	18.3
1734	L	39	6	15.5	16	16	14.7	9.9	9.9	25	19.7	19.7
	R			16.5	17	17	16	9	9	35.3	19.8	19.8
1736	L	36	24	20.5	23.5	22	6.5	3	2.6	20.7	19.7	24
	R			15	19	20	10.5	3.3	3	30	17	13.5
1737	R	54	24	16	15	16	15.1	7.7	8	37.7	21.3	24.7
1738	L	48	24	13.5	16	15	14.1	8.8	8.4	31.2	9.4	14.8

	R			15.5	17	16	15.7	9.9	10.5	45.5	29.3	31.2
1739	L	55	24	20	20.5	19.5	15.1	8.5	7.8	33.7	26.7	27.9
	R			19.5	20	18	14.9	6.4	6.2	33.5	16.4	22.4
1740	L	53	24	20	23	22.5	20.3	9.8	11.8	45.5	32.6	31.9
	R			23.5	24	23.5	16.4	9.5	9.2	37.4	26.7	20
1741	L	26	24	16	18	18	14.2	6.8	6.4	27.4	14.3	15.8
	R			15.5	16.5	16.5	14.2	6.5	7.2	35.4	19.7	17.9
1742	L	57	11	17.5	-	21	18.8	-	6.5	45.4	-	21.5
1743	R	65	24	9	9.5	9	12.6	7.8	5.9	22.5	14.7	19.3
1744	L	48	24	5	5	6.5	14.6	11.9	11.8	19.3	16.1	16
1745	L	55	24	17.5	20	21.5	13.7	5.7	5.8	38.3	17.9	9.4
	R			17.5	18	18.5	10.3	5.7	5	32.8	19.7	11.4
1746	L	61	24	21	24.5	23	24.2	8.7	4.5	52.8	10.7	5.4
	R			20	20	19	18.3	5.5	5.7	38	9.4	9.4
1747	L	34	24	19.5	20	19	8.1	5	4.5	17	11.2	9.4
	R			16	19	17	13.8	6.9	6.3	32.7	17.9	16.5
1748	L	55	24	17	20	20	17.8	9.3	7.2	35.6	19.3	19.9
	R			14.5	16	16.5	19.3	6.9	6.3	48.1	14	13.7
1749	L	46	12	13	12	12	11.8	8.7	7.2	19.5	15.3	13.6
	R			11.5	12.5	14	11.6	5.8	6.5	22.6	12.3	14.5
1750	L	38	12	15.5	16	16	16.4	8.7	8.7	28.6	16.2	16.6
Mean (range)		47.96 (16 to 75)	20.27 (4 to 36)	15.88 (0 to 30)	17.60 (1 to 30)	17.17(0 to 29)	14.55 (6.5 to 24.2)	7.52 (2.9 to 12.8)	7.18 (1.3 to 14.2)	31.88 (16.5 to 52.8)	18.91 (8.4 to 38.9)	18.78 (4.8 to 38.7)

IMA, intermetatarsal angle; MMA, metatarsus adductus angle; MPA, metatarsophalangeal angle.

Table ii.

Case #	Side	Pre-op				Final			
		Pain	Function	Alignment	Total	Pain	Function	Alignment	Total
1678	R	20	37	8	65	40	45	15	100
1679	R	20	37	8	65	40	45	15	100
1680	R	20	37	8	65	30	37	8	75
1681	L	20	37	8	65	40	40	15	95
	R	30	37	8	75	40	40	15	95
1682	L	30	37	15	82	40	45	15	100
	R	30	37	15	82	40	45	15	100
1683	L	20	32	0	52	40	45	15	100
	R	20	32	0	52	40	45	15	100
1684	L	20	32	15	67	40	45	15	100
	R	20	32	15	67	40	45	15	100
1685	R	20	29	8	57	40	45	8	93
1686	L	30	37	8	75	40	45	15	100
1687	R	20	24	0	44	40	45	15	100
1688	L	30	32	8	70	40	45	15	100
	R	30	32	8	70	40	45	15	100
1689	L	20	24	0	44	30	45	8	83
	R	30	32	8	70	40	45	15	100
1690	L	20	29	0	49	40	45	8	93
	R	30	32	8	70	40	45	15	100
1691	L	20	29	8	57	40	45	8	93
	R	20	24	0	44	40	45	8	93
1692	L	30	37	8	75	40	45	15	100
1693	L	20	27	0	47	NA	NA	NA	0
	R	20	27	0	47	NA	NA	NA	0
1694	L	20	27	0	47	40	45	15	100
	R	30	32	8	70	40	45	15	100
1695	L	20	29	0	49	40	45	15	100
	R	20	29	0	49	40	45	15	100
1696	L	30	32	15	77	40	40	15	95
	R	30	32	15	77	40	45	15	100
1697	R	30	37	8	75	40	45	15	100
1698	L	30	37	15	82	40	45	15	100
	R	30	37	15	82	40	45	15	100

1699	R	30	37	15	82	40	45	15	100
1700	L	20	29	8	57	40	45	15	100
	R	30	37	8	75	40	45	15	100
1702	L	20	24	0	44	30	32	0	62
	R	20	24	0	44	30	32	0	62
1703	R	30	32	8	70	40	45	15	100
1704	L	20	27	0	47	40	45	15	100
	R	20	27	0	47	40	45	15	100
1705	L	20	24	0	44	40	40	15	95
	R	20	24	0	44	40	40	15	95
1706	L	30	37	8	75	40	45	8	93
	R	30	37	8	75	40	45	15	100
1707	R	30	29	8	67	40	45	15	100
1708	L	30	37	8	75	40	45	15	100
	R	30	37	8	75	40	45	15	100
1709	L	20	29	0	49	40	45	8	93
	R	30	32	8	70	40	45	15	100
1710	L	30	32	8	70	40	45	15	100
	R	30	32	8	70	40	45	15	100
1711	L	20	29	0	49	40	45	8	93
	R	30	32	8	70	40	45	15	100
1712	L	20	24	0	44	40	45	15	100
	R	30	29	8	67	40	45	15	100
1713	L	30	37	8	75	40	45	15	100
	R	30	37	8	75	40	45	15	100
1714	L	30	37	15	82	40	45	15	100
	R	30	37	15	82	40	45	15	100
1715	L	30	32	8	70	40	45	15	100
	R	30	32	8	70	40	45	15	100
1716	L	30	37	8	75	40	45	15	100
	R	30	37	8	75	40	45	15	100
1717	L	30	37	8	75	40	45	15	100
	R	30	37	8	75	40	45	15	100
1718	L	30	32	8	70	40	45	15	100
1719	L	20	32	8	60	40	45	15	100
	R	20	32	8	60	30	42	8	80
1720	L	30	37	8	75	40	45	8	93
	R	30	37	8	75	40	45	8	93

1721	L	30	37	8	75	40	45	15	100
	R	30	37	8	75	40	45	15	100
1722	L	30	32	8	70	40	45	5	85
	R	30	37	15	82	40	45	15	100
1723	L	30	37	15	82	40	45	15	100
1724	L	20	29	8	57	40	45	15	100
	R	20	29	8	57	40	45	15	100
1725	L	30	32	8	70	40	40	15	95
1726	L	30	37	8	75	40	45	15	100
	R	30	37	8	75	40	45	15	100
1727	R	30	37	8	75	40	45	15	100
1728	L	30	32	8	70	30	37	8	75
1729	L	20	29	8	57	40	37	15	92
	R	20	29	8	57	40	37	15	92
1730	L	20	32	8	60	40	45	15	100
	R	30	37	8	75	40	45	15	100
1731	L	20	34	8	62	30	34	8	72
	R	20	34	0	54	30	34	8	72
1732	L	30	37	8	75	40	45	15	100
	R	20	29	0	49	40	45	15	100
1733	L	30	37	8	75	40	45	15	100
	R	30	37	8	75	40	45	15	100
1734	L	30	32	15	77	40	45	15	100
	R	30	32	8	70	40	45	15	100
1736	L	30	37	15	82	40	45	15	100
	R	30	37	8	75	40	45	15	100
1737	R	30	37	8	75	40	40	15	95
1738	L	30	37	8	75	40	45	15	100
	R	20	29	0	49	40	37	8	85
1739	L	30	32	8	70	40	40	8	88
	R	30	37	8	75	40	45	8	93
1740	L	30	32	8	70	40	45	8	93
	R	30	37	8	75	40	45	15	100
1741	L	30	37	8	75	40	45	15	100
	R	30	37	8	75	40	45	15	100
1742	L	20	29	8	57	40	45	15	100
1743	R	30	37	8	75	40	45	15	100
1744	L	30	37	15	82	40	45	15	100

1745	L	30	37	8	75	40	40	15	95
	R	30	37	8	75	40	40	15	95
1746	L	20	24	0	44	30	32	15	77
	R	30	29	8	67	30	32	15	77
1747	L	30	37	15	82	40	45	15	100
	R	30	32	8	70	40	45	15	100
1748	L	20	29	0	49	40	45	15	100
	R	20	29	0	49	40	45	15	100
1749	L	30	37	15	82	40	45	15	100
	R	30	37	15	82	40	45	15	100
1750	L	30	37	8	75	40	45	15	100
Mean (range)		26.36 (20 to 30)	33.01 (24 to 37)	7.38 (0 to 15)	66.75 (44 to 82)	39.16 (30 to 40)	43.60 (32 to 45)	13.62 (0 to 15)	94.67 (0 to 100)

Table iii.

Case #	Side	Age, yrs	Follow-up time, mths	Sgarlato's MAA, °			IMA, °			MPA, °		
				Preop	6 mths post	Final	Preop	6 mths post	Final	Preop	6 mths post	Final
1678	R	35	18	15	17.5	17	15.9	-	10.2	29.5	-	20.7
1690	L	29	24	15	18	17	18	9.4	11.7	38.6	24.4	26.2
1691	L	44	12	19	22.5	23	18.6	12.5	12.5	46.2	31.9	29.7
	R			15	19.5	17	19.4	12.8	12.2	49.1	31.2	32.5
1706	L	25	24	9	9.5	9	16.8	10.1	10.4	34.7	22.7	23.2
1721	L	66	12	10.5	12	11	16.9	12.3	11.5	29.4	21.7	20.6
	R			13.5	15	16	17.4	11.5	11.4	26.4	20.8	20.7
1738	R	48	24	15.5	17	16	15.7	9.9	10.5	45.5	29.3	31.2
1740	L	53	24	20	23	22.5	20.3	9.8	11.8	45.5	32.6	31.9
1744	L	48	24	5	5	6.5	14.6	11.9	11.8	19.3	16.1	16
Mean (range)		43.50 (25 to 66)	20.25 (12 to 24)	13.75 (5 to 20)	15.90 (5 to 23)	15.50 (6.5 to 23)	17.36 (14.6 to 20.3)	11.13 (9.4 to 12.8)	11.40 (10.2 to 12.5)	36.42 (19.3 to 49.1)	25.63 (16.1 to 32.6)	25.27 (16 to 32.5)

IMA, intermetatarsal angle; MMA, metatarsus adductus angle; MPA, metatarsophalangeal angle.

Table iv.

Case #	Side	Age, yrs	Follow-up time, mths	Sgarlato's MAA, °			IMA, °			MPA, °		
				Preop	6 mths post	Final	Preop	6 mths post	Final	Preop	6 mths post	Final
1678	R	35	18	15	17.5	17	15.9	-	10.2	29.5	-	20.7
1680	R	75	12	30	30	29	9.2	8.9	7.7	37.8	38.9	34.1
1681	L	55	24	15	15	15	15.8	10.1	8.7	31.4	20.5	23.9
1685	R	41	12	15	18.5	20	16.8	8	8.1	45.6	20.9	24.3
1687	R	51	24	19	20	20	18.5	9.5	7.1	43.9	19.9	22.7
1688	L	49	24	18	18	16	15.3	7.1	7.6	35.6	24.4	23.9
	R			15	18.5	17	13.7	6.5	7	35.4	23.4	23.6
1689	L	66	36	19	18	20	16.6	9.8	8.4	38.3	23.4	28.9
1690	L	29	24	15	18	17	18	9.4	11.7	38.6	24.4	26.2
1691	L	44	12	19	22.5	23	18.6	12.5	12.5	46.2	31.9	29.7
	R			15	19.5	17	19.4	12.8	12.2	49.1	31.2	32.5
1693	R	59	6	8.5	9.5	9.5	17.6	9	9	41.9	23.9	23.9
1694	L	59	12	22.5	26.5	26.5	14.1	7.3	7.1	43.2	25.9	23.5
1696	L	53	24	25.5	28	24	10.9	5.3	5.3	24.9	19.3	20.4
	R			25	26	26	10.2	4.1	4.9	28.7	21.8	22
1700	L	34	24	15.5	17	15	15.8	7.2	6.7	33.8	22.2	21.8
1702	L	61	24	18.5	19	17	13.8	8.8	9.9	46.1	37.4	38.7
	R			19	21.5	21.5	11.6	7.4	7.6	41.7	34.7	33.3
1705	L	65	24	16	21	20	17.5	7.7	9.3	43.4	20.6	20.9
	R			15	19	18.5	15.6	6.6	7.3	35.7	24.9	26.1
1706	L	25	24	9	9.5	9	16.8	10.1	10.4	34.7	22.7	23.2
1709	L	64	24	13	16	16	15.6	6.2	6.6	39.9	20.4	22.8
1710	L	20	12	21	23	21.5	13.8	4.8	8.1	34.7	24.1	26.8
1711	L	54	12	20.5	24	22.5	16	8.7	8.8	42.7	18.9	25.4
1712	R	35	24	16	18.5	17	18.8	8.3	8.1	31.3	17.6	23
1716	R	17	24	12.5	13.5	13	15.3	8.6	9.9	34	21.8	21.2
1719	L	55	24	22	23	23	16.6	8.5	8.7	41.8	28.9	33.4
	R			20	20.5	20.5	17.4	7.7	7.7	46.3	28.6	32.8

1720	L	53	24	18	21	19	10.7	6	5.8	32.9	19.9	21.8
	R			18	19	20	10.9	5.5	5.3	37.6	22.9	24.7
1721	L	66	12	10.5	12	11	16.9	12.3	11.5	29.4	21.7	20.6
	R			13.5	15	16	17.4	11.5	11.4	26.4	20.8	20.7
1724	L	36	24	25	27	26.5	15.6	7.2	7.6	35.4	23.2	22.7
	R			24	26.5	24	15.4	5.5	6	36.3	18.3	20.8
1728	L	69	12	18	18	18	13.1	8.9	8.7	27	22.1	22.6
1730	L	36	24	17.5	17	17	17	8.9	7.6	37.2	21.1	21.2
1731	L	56	12	11	-	11	12.3	-	7.7	28.6	-	21.7
	R			11.5	-	7.5	14	-	6.6	40	-	22.8
1733	L	44	24	9.5	14	14	17.2	6.9	8.2	35.2	19	21.3
1736	L	36	24	20.5	23.5	22	6.5	3	2.6	20.7	19.7	24
1737	R	54	24	16	15	16	15.1	7.7	8	37.7	21.3	24.7
1738	R	48	24	15.5	17	16	15.7	9.9	10.5	45.5	29.3	31.2
1739	L	55	24	20	20.5	19.5	15.1	8.5	7.8	33.7	26.7	27.9
	R			19.5	20	18	14.9	6.4	6.2	33.5	16.4	22.4
1740	L	53	24	20	23	22.5	20.3	9.8	11.8	45.5	32.6	31.9
1742	L	57	11	17.5	-	21	18.8	-	6.5	45.4	-	21.5
Mean (range)		48.83 (17 to 75)	20.20 (6 to 36)	17.39 (8.5 to 30.0)	19.52 (9.5 to 30.0)	18.49 (7.5 to 29.0)	15.26 (6.5 to 20.3)	8.07 (3.0 to 12.8)	8.18 (2.6 to 12.5)	37.05 (20.7 to 49.1)	23.99 (16.4 to 38.9)	25.09 (20.4 to 38.7)

IMA, intermetatarsal angle; MMA, metatarsus adductus angle; MPA, metatarsophalangeal angle.