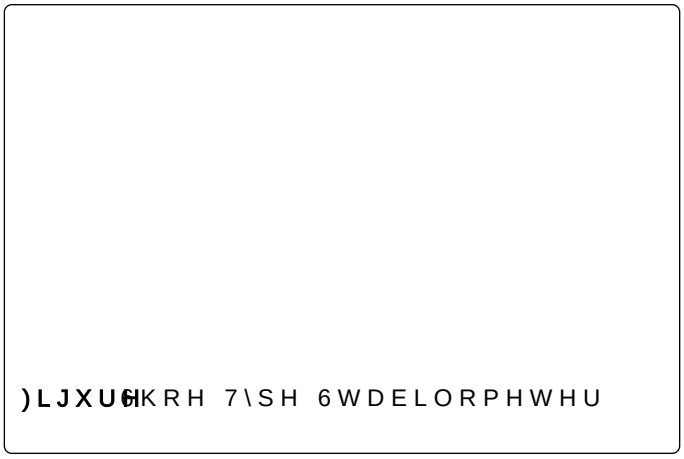
Effects of Foot Arch Structure on Postural Stability

(PL $Q]D.LDQDNR 1DNDMLPD <XPL ,ZDNDPL ,QRXH7RUX 6DWRVKL1DJDFKL <DPDVKLWD DQG <XML 2KWD

WKH 6KRH 7\SH 6WDELORPHWHU ZHUH VWURQJO\ FRUUHODWHG ZLWK D VWDWLRQ
W\SH VWDELORPHWHU 7KH FRUUHODWLRQ FRHIILFLHQW RI DQWHULRU SRVWHUL
$3 VZD\ ZDV DQG RI PHGLDO ODWHUDO 0/ VZD\ ZDV GXULQJ
VWDQGLQJ 3RVWXUDO FRQWURO LV WKHUHIRUH DEOH WR EH HYDOXDWHG ZLWK
GHYLFH $GGLWLRQDOO\ WKH PHDVXUHPHQW GHYLFH KDG D ZLUHOHVV GDWD
WUDQVPLVVLRQ XQLW FRPPXQLFDWLRQ PHWKRG %OXHWRRWK GLVWDQFH a
P VDPSOLQJ IUHTXHQF\ +] 7KHUHIRUH WKLV GHYLFH FRXOG HYDOXDWH
SODQWDU SUHVVXUH DQG &R3 GXULQJ QDWXUDO VWDQGLQJ



)LJXUH KRH 7\SH 6WDELORPHWHU

3URWRFRO 3UHGLFWLRQ RI DUFK VWUXFWXUH XVLQJ WKH VKRH W\SH VWDELORPHWHU

7KH KXPDQ IRRW FRQWDLQV WKUHH VWURQJ DUFKHV WZR DUUDQJHG ORQJLWXGLQDOO\ DQG RQH WUDQVYHUVH DUFK 7KLV VWXG\ IRFXVHG RQ WKH ORQJLWXGLQDO DUFK VWUXFWXUH ZKLFK ZH K\SRWKHVL]HG WR EH LQYROYHG L SRVWXUDO FRQWURO $V SUHYLRXVO\ H[SODLQHG WKH 6KRH 7\SH 6WDELORPHWH ZDV GHVLJQHG WR HYDOXDWH IRRW DUFK VWUXFWXUH ,Q WKLV SURWRFRO W TXDQWLI\ DUFK KHLJKW XVLQJ WKH 6KRH 7\SH 6WDELORPHWHU D FRPSDULVRQ RI DUFK KHLJKW DQG PLGIRRW SODQWDU SUHVVXUH GLVWULEXWLRQ ZDV FRQGXFWHG 7KH IRRW DUHD ZDV GLYLGHG LQWR ELJ WRH ' IRUHIRRW & (* PLGIRRW %) DQG UHDU IRRW $ DV VKRZQ LQ)LJXUH 0LGIRRW SUHVVXUH ZDV FDOFXODWHG VXPPLQJ WKH SUHVVXUH YDOXH RI VHQVRU % DQG) 7KH UDWLR RI PLGIRRW SUHVVXUH UDWLR RI 03 ZDV FDOFXODWHG E\ GLYLGLQJ PLGIRRW SUHVVXUH E\ WKH VXP WRWDO RI WKH SRLQW VHQVRU SUHVVXUH YDOXHV 7RWDO 3UHVVXUH 7KLV IRUPXOD LV VKRZQ EHORZ 7KH FRRUHODWLRQ EHWZHHQ WKH UDWLR RI 03 DQG ORQJLWXGLQDO DUFK KHLJKW ZD LQYHVWLJDWHG

5DWLR RI 03 > @ 0LGIRRW SUHVVXUH 7RWDO 3UHVVXUH ™

$ ')RRW 6FDQQHU -06 &8 'UHDP*3 FR -DSDQ ZDV XVHG IRU WKH PHDVXUHPHQW RI WKH ORQJLWXGLQDO DUFK KHLJKW 7KLV GHYLFH PHDVXUHV WKH WKUHH GLPHQVLRQDO JHRPHWU\ RI IRRW VWUXFWXUH XVLQJ ODV VFDQQLQJ /RQJLWXGLQDO DUFK KHLJKW ZDV DVVXPHG DV WKH PDUNLQJ