

# Role of Leptin in Obesity

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**Abstract**

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**Keywords:** /HSWLQ +\SH(3WHQHSVRICQ 5HFHSWRU 2EHVLW\ 1HXURHQGRFULQRELQRJ\

, QWURGXFWRQ

/HSWLQ LV D KRUPRQH WKDW FRPHV IURP \*UHHN ZRUG PHDQLQJ WKLQ LV LV DOVR NQRZQ DV 2E JHQH WKDW LV ORFDWHG RQ FKURPRVRPH QXPEHU &\WRJHQHWLF ORFDWLRQ LV T DQG FRQVLVWV RI WKUHH H[RQV DQG WZR LQWURQV WKDW VSDQ NLOREDVHV NE RI '1\$ ODLQ UROH RI OHSWLQ LV WR DFKLHYH DQ HQHUJ\ EDODQFH LQ WKH ERG\ > @ /HSWLQ ELQGV WR UHFHSWRUV L EUDLQ DQG SHUIRUPV VHYHUDO DFWLRQV WKDW PD\ SURYH WKDW OHSWLQ LV LPSRUWDQW LQ WUHDWLRQJ REHVLW\ > @ 7KLV KRUPRQH LV SURGXFHG E\ WKH DGLSRVH WLVVXH PDLQO\ E\ WKH ZKLWH DGLSRVH WLVVXH RI WKH KXPDPQ ERG\ LW LV FRPSULVHG RI DPLQR DFLGV 7KH DPRXQW RI OHSWLQ FLUFODWLRQJ LQ WKH ERG\ LV SURSRUWLRQDO WR WKH DPRXQW RI IDW RI DQ LQGLYLGXDO > @ 5HVHDUFKHUV WKRXJKW WKDW OHSWLQ ZRXOG EH WKH NH\ LQ FRQWUROOLQJ REHVLW\ %XW UHVHDUFK UHYHDOHG WKDW LI JUHDWHU DPRXQW RI OHSWLQ UHQ WKHQ LW LV OHVV HIIHFWLYH LQ WKH EUDLQ IRU FRQWUROOLQJ KXQJHU DQG IR LQWDNH 7KH UHVXOW LV XQFRQWUROOHG IHHGLQJ OHDGLQJ WR JUHDWHU IRF LQWDNH DQG IDW VWRUDJH > @ ,W LV D N'D FLUFODWLRQJ KRUPRQH WKDW UHJXODWHV HQHUJ\ KRPHRVWDVLV YLD K\SRWKDODPLF QHXURQDO SDWKZD\V H[SUHVVLRQJ WKH OHSWLQ UHFHSWRU > @ 7KH GHILFLHQF\ RI OHSWLQ RU OHSW UHFHSWRU LQ KXPDPQ UHVXOWV LQ H[WUHPH REHVLW\ DQG LPSOLFDPWHV OHSWL PHGLDWHG VLJQDOLQJ LQ WKH UHJXODWLRQ RI IRRG LQWDNH HQHUJ\ H[SHQGLWXUH UHSURGXFWLYH WK\URLG DQG LPPXQH IXQFWLRQV > @ /HYHO RI OHSWLQ LV SRVLWLYHO\ FRUOHODWHG ZLWK IDW PDVV EHLQJ LQFUHDVHG LQ RE > @ %XW VRPH VWXGLHV VXJJHVW WKDW OHSWLQ PD\ KDYH D VWLPXODWLRQJ HIIHFW RQ IDW R[LGDWLRQ LQ REHVH VXEHHFWV > @ /HSWLQ LV DOVR SURGXFHG IHZHU DPRXQWV LQ WKH SODFHQWD DQG SUREDO\ LQ WKH WVRPDFK > @ ,W LV UHSRUWHG WKDW ODUJH IDW FHOOV SURGXFH PRUH OHSWLQ WKDW VPDOO RQH 6HUXP OHSWLQ FRQFHQWUDWLRQV DUH KLJKO\ FRUOHODWHG ZLWK ERG\ IDW FRQWHQW LQ QHZERUQ LQIDQWV FKLOGUHQ DQG DGXOWV > @ )LUVW JHQHWL GHIIHFW RQ@@@pÀ `p •@ @ 0@d@p€Uâ 0>•áP •áP @`•0W@ P£0EO\ •â?HO€ðÄQV PDFD

5HJXODWLRQ RI (QHUI\ ([SHQGLWXUH )RRG ,QWDNH DQG  
%RG\ :HLJKW E\ /HSWLQ

/HSWLQ LV DQ LPSRUWDQW FRPSRQHQW LQ WKH ORQJ WHUP UHJXODWLRQ RI  
ERG\ ZHLJKW 5HFHQW VWXGLHV ZLWK REHVH DQG QRQ REHVH KXPDQV  
GHPRQVWUDWHG D VWURQJ SRVLWLYH FRUOHODWLRQ RI VHUXP OHSWLQ  
FRQFHQWUDWLRQV ZLWK SHUFHQWDJH RI ERG\ IDW ,W DSSHUV WKDW DV  
DGLSRF\WHV LQFUHDVH LQ VLJH GXH WR DFFXPXODWLRQ RI WULJO\FHULGH WKH  
V\QWKHVLJH PRUH DQG PRUH OHSWLQ /HSWLQ V HIIHFW RQ ERG\ ZHLJKW DUH  
PHGLDWHG WKURXJK HIIHFW RQ K\SRWKDODPLF FHQWHUV WKDW FRWURO IHHGL  
EHKDYLRO DQG KXQJHU ERG\ WHPSHUDWXUH DQG HQHUI\ H[SHQGLWXUH > @

3DWKZD\V ,QYROYHG LQ /HSWLQ 3URGXFWLRQ

FRJQLWLYH SURILOH ZDV GRQH ZLWK WKHURHS (RORGVH HUH HQWQH [SHULXHQWVS  
5HVXOWV VKRZHG VLJQLILFDQW GLIIHUHQFH KSHLQW HQWVROOLQJ REHYLWHYH POFV HQGWLIF  
%, VXEJURXS FDOFXODWHG E\ :HFKVOHU) UHWHOOEUFHQF 6 FDOHQRU & KDOHQH  
UHVLVHG : ,6& 5 \$FFRUGLQJ WR UHJUHVVRQ FDOXODQVLEKXP, QLV-WKHURQO\ 6  
YDULDEOH WKDW LV VLJQLILFDQWO\ UHODWHG WR LQVHOHQHFWXDO OHYHO D&RQ  
RXW LQWHOOFWXDO OHYHO LQ REHVH D&RQVYRQOZH&RQW L&KLOCHLWHD URXWL  
QHXURFRJQLWLYH DVVHVVPHQW LV UHFRPHVHQJHU ULERQXFOHLF DFLG DQ  
K\SRWKDODPLF DUFXDWH QXFOHXV RI WKH  
PRXVH (QGRFULQRORJ\

**&RQFOXVLRQ**

2EHVLW\ KDV EHHQ WKH SUREOHP LQ WKH VRFHWHV RI GHYHORSLOJ DQG  
GHYHORSHG ZRUOG 6RPH GLVHVVHV FDXVHG REHVLW\ 7R RYHUFRPH RI  
WKR VH GLVHVVHV LV LV QHFHVVDU\ WR FDFWURJODERPHVW LOGVW 2 0LUDG DUW 3%  
VKRZHG WKDW WKH /HSWLQ PD\ EH D YLWV 3KHORVSLF THHFWV RI OHSWLQ UHSDFH  
EHFDXVH LV WKH DQWL REHVLW\ KRUPRPHV 8FL XVLQJ OHSWLQ WKHUD\ PD\ EH  
SRVVLEOH WR SUHYHQW REHVLW\ DQG GLVHVVV OLNH K\SHUWHQVLRQ DQG GLDF  
PHOOLWXV EHIRUH WKHLU RFFXUUHQFH FRPSUHKRQVDFWLRQ PDS RI OHSWLQ V

**5HIHUHQFHV**

- 6FKZDUW] 0: :RRGV 6& 3RUWH ' -U 6HHOH\ 5- %DVNLQ '\*  
&HQWUDO QHUYRXV V\VWHP FRQWURO RI IRRG LQWLNH 1DWXUH
- 0RQWDJX BUURFL: KLWHKRBOG -SDX + HW DO
- &RQJHQLWDO OHSWLQ GHILFLHQF\ LV DVVRFLDWHG ZLWK VHYHUH HDUO\ RQVHW REHVLW  
LQ KXPQV 1DWXUH a
- &O«PHQWDLVVH & /DKORX 1 &DEURO 6 3HOORX[ 9 HW DO \$  
PXWDWLRQ LQ WKH KXPQ OHSWLQ UHFHSWRU JHQH FDXVHV REHVLW\ DQG SLWXLWDU\  
G\VIXQFWLRQ 1DWXUH
- 2]DWOD]GHPILVFLQLR +XPDQ OHSWLQ GHILFLHQF\ FDXVHG  
E\ DPLVVHQXWDLWRQ PXOWLSOH HQGRFULQH GHIFWV GHFUHDVHG  
V\PSDWKHWLF WRQH DQG LPPXQH V\VWHP G\VIXQFWLRQ LQGLFDWH QHZ WDUJHWV  
IRU OHSWLQ DFWLRQ JUHDWHU FHQWUDO WKDQ SHULSKHUDO UHVLVWDQFH WR WKH HII  
RI OHSWLQ DQG VSRQWDQHRXV FRUHFWLRQ RI OHSWLQ PHGLDWHG GHIFWV &OLQ  
(QGRFULQRO 0HWDE a
- 7DUWDSOLHPEVNL 0 :HQJ ; 'HQJ 1 &XOSHSU - HW DO  
,GHQWLILFDWLRQ DQG H[SUHVVLRQ FORQLQJ RI D OHSWLQ UHFHSWRU 2% 5 &HO
- 9HUG&FKRXEUR 6 %XHPDQQ % +ROVW -- %ORZ - HW DO /HSWLQ  
OHYHOV DUH DVVRFLDWHG ZLWK IDW R[LGDWLRQ DQG GLHWDU\ LQGXFHG ZHLJKW ORVV L  
REHVLW\ 2EHV 5HV
- )U%KEHFN ,QWUDFHOOXODU VLJQDOOLQJ SDWKZD\V DFWLYDWHG E\ OHSWLQ  
%LRFKHP -
- )DWLPD : 6KDKLG \$ ,PUDQ 0 0DQ]RRU - +DVQDLQ 6 HW DO /HSWLQ  
GHILFLHQF\ DQG OHSWLQ JHQH PXWDWLRQV LQ REHVH FKLOGUHQ IURP 3DNLVWDQ ,QW  
- 3HGLDWU 2EHV
- %UHQQDQ \$0 0DQ]RURV &6 'UXJ ,QVLJKW WKH UROH RI OHSWLQ LQ  
KXPQ SK\VLORJ\ DQG SDWKRSK\VLORJ\ HPHUJLQJ FOLQLFDO DSSOLFDWLRQV  
1DW &OLQ 3UDFW (QGRFULQRO 0HWDE
- \*UHHQ 0DIIHL 0 %UDGHQ 99 3URHQFD 5 'H6LOYD 8 HW DO 7KH  
KXPQ REHVH 2% JHQH 51\$ H[SUHVVLRQ SDWWHUQ DQG PDSSLQJ RQ WKH  
SK\VLFDO F\WRJHQHWLF DQG JHQHWLF PDSV RI FKURPRVRPH \*HQRPH 5HV