

# Taste and Smell Loss in COVID-19: Possible Mechanisms, Challenges and Clinical Implications

0HKPHW +DNDQ 2JGHQHU

0RQHOO &KHPLFDO 6HQVHV &HQWHU 3KLODGHOSKLD 86\$

&RUUHVSQRGLQU DDXHKRRIW +DNDQ 2JGHQHU 0RQHOO &KHPL

5HFHLYHG\ 0DQXFVLSW 1R (GLWVVLJQHGD\

-, '7 5HYLVHG XQ 0DQXFVLSW 1R -3XEOLVKH\$Q

&LWDW\CRHQHU 0+ 7DVWH DQG 6PHOO /RVV LQ &29,'

&RS\ULJKW 2JGHQHU 0+ 7KLV LV DQ RSHQ DFFHV DUWLF

0DQ\ YLUXVHV LQFOXGLQJ FRURQDYLUXVHV PD  
FKDQJHV LQ ROIDFWRU IXQFWLRQ SULPDULO\  
UHVSRQVHV > @ :KLOH LW LV ZHOO NQRZQ WKDW  
FKHPRVHQVRU\ G\IXQFWLRQ WKH XQGHO\O\LQJ )  
PHFKDQLVPV UHPDLQ XQNQRZQ DQG PD\ EH GLWV  
FKHPRVHQVRU\ \V\WHP 7KH 6\$56 &R9 51\$ JHQRPH  
DQ HQYHORSH FRPSRVHG RI VSLNH SURWHLQV DQG  
LQIHFWLRQ F\FOH LV LQLWLDWHG E\ WKH DWDFK  
6\$56 &R9 WR \$QJLRWHQVLQ , &RQYHUWLQJ (QJ\PH  
FHOO PHPEUDQH SURWHLQ WKDW VHUHV DV D  
WUDQVPHPEUDQH SURWHDVH ZKLFK VHUHV DV  
HQWU\ E\ HQGRF\WRVLV

2QH SRVVLEOH H[SODQDWRU IRU 6\$56 &R9 LQ  
ORVV LV WKDW WKH YLUXV LQIHFWV FHOOV WKURXJK  
SURWHLQ DQG WKH \$( UHFHSWRU RQ WDUJHW  
+%2 FHOOV DQG KXPDQ 2OIDFWRU\ (SLWKHOLDO )  
\$( DQG RU 703566 DUH SURQH WR 6\$56 &R9  
\$OWKRJK \$( UHFHSWRU H[SUHVV RQ WKH WDVWH  
SUREDEO\ GRHV QRW FDXVH WDVWH ORVV WKURXJK  
FHOOV ,QVWHDG WDVWH EXGV PLJKW EH GPDJHG E\  
E\ WKH LQIHFWLRQ \$OWHUQDWLYHO\ WDVWH ORVV  
WDVWH QHUYH GPDJH IROORZLQJ FHQWUDO QHUYRXV  
&R9 \$QRWKHU SRVVLEOH H[SODQDWRU IRU WDVWH  
VWRUPV FDXVHG E\ 6\$56 &R9 LQ WDVWH FHOOV  
HSLWKHOLDO FHOOV \$ F\WRNLQH VWRUP FRXOG PDNH  
6\$56 &R9

6SHFLILF VLJQDOLQJ HYHQWV FDQ FDXVH D F\WRNLQH  
WKUHH IRUPV RI FHOO GHDWK VLJQDOLQJ IROORZLQJ D  
LQFOXGLQJ DSRSWRVLV S\URSWRVLV DQG QHFURSWRVLV  
F\WRNLQH UHFHSWRU LQWHUDFWLRQ SDWKZD\ KDV  
LPSRUWDQW FURVV WDN SDWKZD\ XVLQJ D SDWKZD\  
DQDO\VLV IRU 6\$56 &R9 LQIHFWLRQ \$( KDV EHQ  
VQRZQ WR EH RYHU

H[SUHVVHG LQ WKH SUHVHQFH RI ,)1 > @ ,Q  
\$( UHODWLYH H[SUHVVLRQ ZDV REYHUYHG

'XULQJ 6\$56 &R9 LQIHFWLRQ DOWHUHG RQ  
ZHUH REYHUYHG EXW WKH HWLORR\ UHPDLQV

6\$56 &R9 LQIHFWLRQ RI QRQ QHXURQDO FHOV  
G\IXQFWLRQ LQ &29,' SDWLHQWV 3HUVL

IXQFWLRQ LV FDXVHG E\ WKH SUHVHQFH RI  
FDOHQVHV &HQWHU 3KLODGHOSKLD 86\$ V\

YWXGL\ KDYH G\BRQVZHWHG HOHYDWHG C  
LQ'WKH 2OIDFWRU\ (SLWKHOLXP 2( RI LQIHFW

LQWHUDFWLRQV EHQGRVHQWV  
6\$56 &R9 LQIHFWLRQ 25WK QHUYHQV RWH

SDWKZD\ ZKLFK FRXOG FDXVH VLJQDOLQJ  
FDXVH WKH DOWHUHG 25 H[SUHVVLRQ

FHVVDWRU\ LQDPWHQV DQDPPDWRU\ LQVXOW >  
6\$56 &R9 LQIHFWLRQV G\IXQFWLRQV GLVRUGHV  
FDXVH WKH DOWHUHG LQIHFWLRQV HJ ,QIOXHJD

6\$56 &R9 LQIHFWLRQV RYHU 7RHLQJ KDYH  
FDXVH WKH DOWHUHG VSRWHQV +RZHYHU WK

6\$56 &R9 LQIHFWLRQV KDV GUDZQ OLWWOH D  
FDXVH WKH DOWHUHG WKURXJK FKHPRVHQV

6\$56 &R9 LQIHFWLRQV G\IXQFWLRQV KDV  
GHSUHVVLRQ DQG DQ[LHW\ DQG FRJQLWL

FDXVH WKH DOWHUHG VSHFLILFDOO\ ROIDFV  
FDXVH WKH DOWHUHG UHXXWLQSLN\VLFD

FDXVH WKH DOWHUHG KXPDQV DQDPPDWRU\  
FDXVH WKH DOWHUHG DQG 7KURXJK

FDXVH WKH DOWHUHG LQIHFWLRQV SXEOLF  
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