P L I A A T R -B C C

- ,[1] - C ,[1] A. ,[2] D . ,[2] C [1]

[1]D , DG/ G B , k - C , k , B , G [2] , C , B k , C ,

C : - , k D , 5 , B 100871, C ; @ k C , D , k , 5 B 100871, C ; @ k ;

: D 10, 2013
A : F 10, 2014

C : - C - , A, D , C.

. *Invest Ophthalmol Vis Sci.* 2014;55:2020 2030. D : 10.1167/ .13-13739

P RPOSE.

METHODS. (22.5) / (E) (F), F

RES LTS. F F F 1.5 1.6 (*P* < 0.001) E 53% (*P* < 0.001).

CONCL SIONS. k : , ,

A (. ,) 6 7 ( ).[1] , , 2 8 , 9 11 , k 3,12,13 (F . 2 4 k). 14 16 17,18 , 19 21 , 22 (E) k 23 , 24 26 D ? ,

C 2014 A : 1552-5783

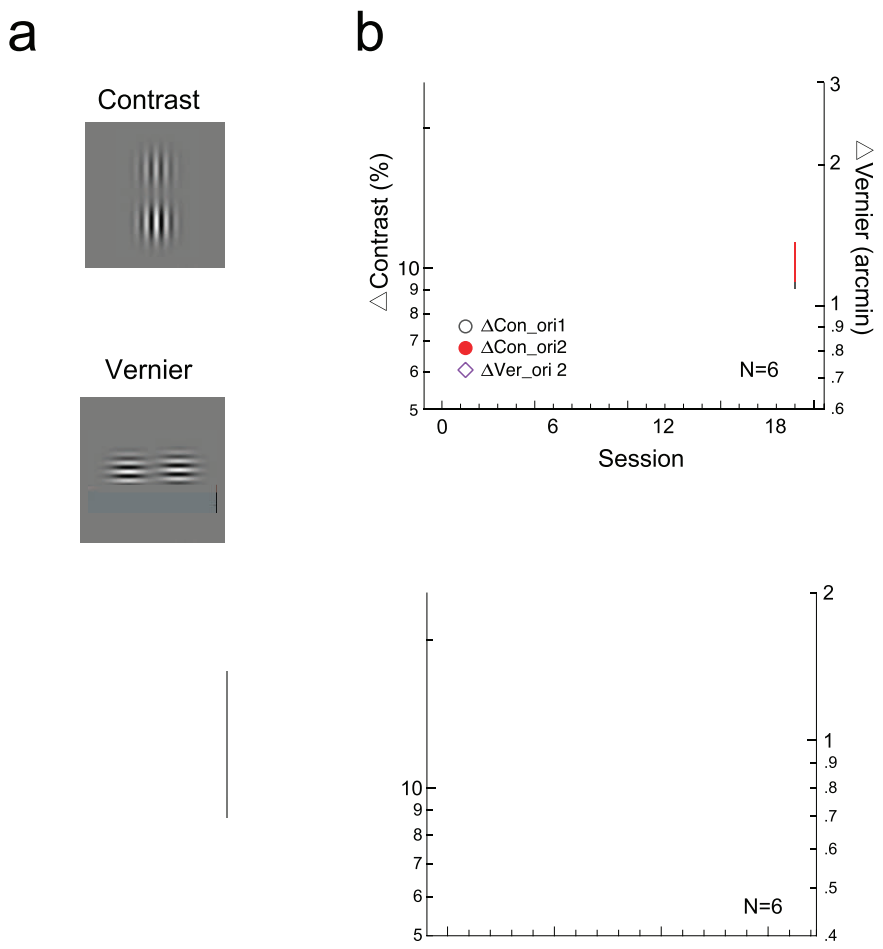
S

(F 1).
(2.4
, D 0.7) 2.7
(8.2 , D = 1.8)
0.9
G (G
)
k (F 2). G
( ),
(80%), ( ),
(180°)
G
G G
G
±50. (±2).
G
G

0° 180°
(17°
2)
k
1.6
G
, G (36° 126°)
(F 4).
k 80%. 2 .

F A

A -E
E (k). C -E
E k
E -E
E . B
-E -E
E



C . G
0.29° × 0.29°
±45°
k 4 .
C S . C
G (σ 0.9°, ±45°
). 1/16, 1/8, 1/4, 1/2, 3/4,
1 k
. D

4 .
S . (C .,
, C , , A)
(30 / ²).
P
-G
400
200-
k . A
G
G

G G G -G k k A k k G 400 200- 500- G k E k k ( ) E(, ,). A 3- -1- 79.4% . E (E) 40 50 . 0.05 (0.03 E). k

S A

( ); 100% × ( )/ A ( ) / 1 , 0 - *t*- A A .

S D

F 1 . 19 . A (*N* 12) . A , .

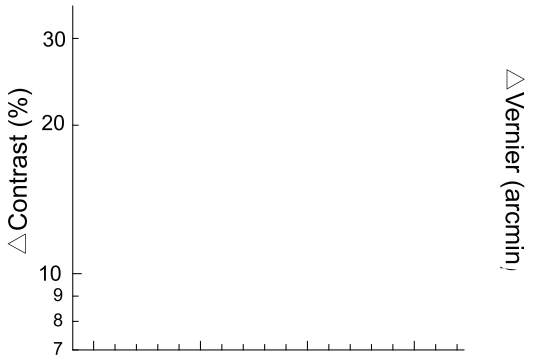
RES LTS

T T A P L E TPE L S F

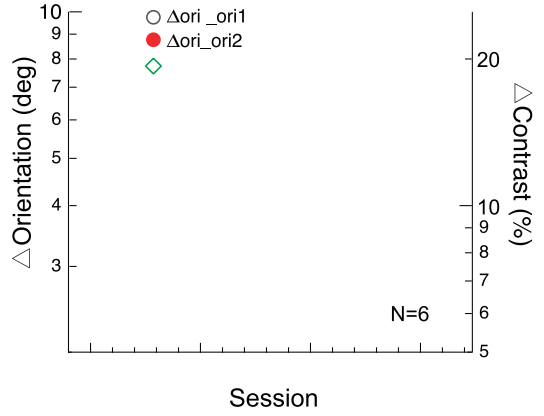
(2.4 ± 0.7 ; F . 5 ,), 2.7 19 (*N* 6) k 8 10 2- G 0° 90° (F . 2). (ΔC 1, - 1; F . 2), 16.1 ± 1.8% 10.7 ± 1.0%. 32.5 ± 3.2% (*P* < 0.001), 21.5% 44.7%. 90° (ΔC 2, 1.5 ± 5.9%, *P* 0.41; , 19.1% 18.1%), F E , k, - (Δ 2, 33.6 ± 5.4%, *P* < 0.001; , 14.4% 53.1%). A , 14.9 ± 1.4% 10.4 ± 0.9% (ΔC 2, 29.3 ± 3.8%, *P* < 0.001; , 18.6% 44.9%). 28.6 ± 4.5% (,15.0% 47.4%), (*P* 0.59, - *t*-). E 0.04 ± 0.18. 0.94 ± 0.20, 1 (*P* 0.39), (*N* 6) 11.5 ± 1.0% 8.1 ± 0.9% (ΔC 1, 29.0 ± 2.7%, *P* < 0.001; , 18.9% 38.2%; F . 2). 11.3 ± 0.7% 10.3 ± 0.5% (ΔC 2, 8.5 ± 3.0%, *P* 0.018; , 1.5% 20.1%, 0.31 ± 0.09). (Δ 2, 26.7 ± 4.9%, *P* 0.001; , 10.4% 42.5%). 8.9 ± 1.0% (ΔC 2, 14.9 ± 5.6%, *P* 0.023; , 3.1% 32.9%). 22.7 ± 3.8% (, 7.3% 35.2%), (*P* 0.11, - *t*-).

0.81 ± 0.15, 1 (*P* 0.12).

E , . A (*N* 7) - E (E), , E. , (Δ 2, 40.4 ± 4.7%, *P* < 0.001; , 24.3% 55.0%; F . 3), 13.7 ± 1.3% 12.6 ± 1.0% (ΔC 2, 6.7 ± 3.3%, *P* 0.044;



b

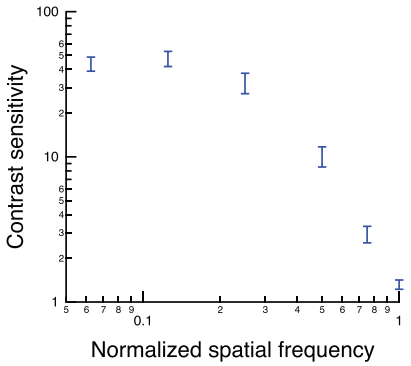


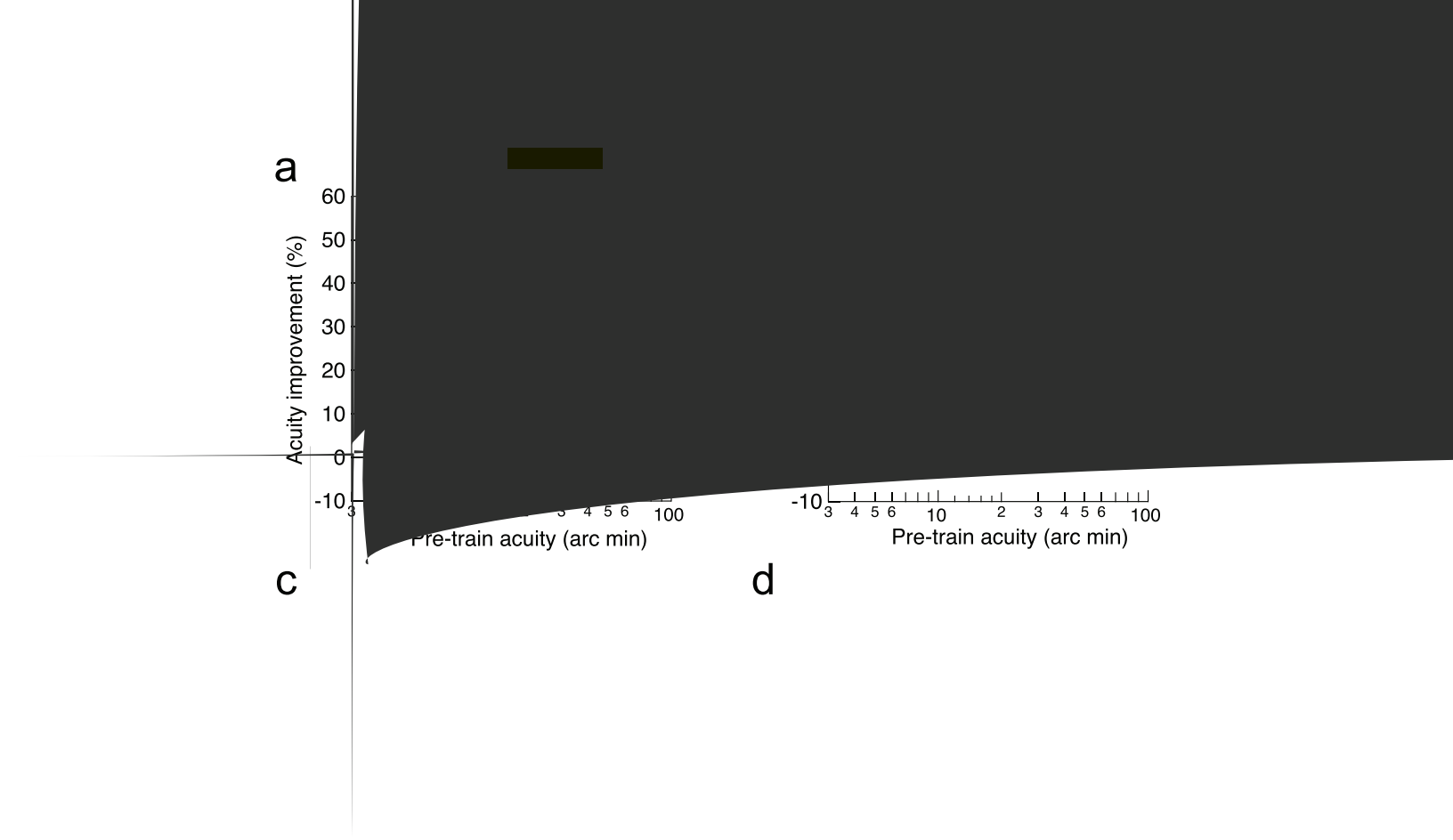
29.5%). 18.0 ± 4.1%, 0.1% 35.5%.
ΔC 1 ΔC 2 E
(*P* 0.13, - *t*-).
0.73 ± 0.19, 1 (*P* 0.11). , E
F
(F 4) k
(36°/126°) 6.2° ± 1.1° 3.8° ± 0.6° (Δ 1, 38.8 ± 4.9%, *P* 0.001; , 28.6% 58.3%; F . 4).
(Δ 2, 8.3 ± 5.1%, *P* 0.44; , 8.9% 21.6%).
(ΔC 2, 14.2 ± 6.3%, *P* 0.038; , 10.6% 31.1%)
(Δ 2, 5.5° ± 0.8° 4.3° ± 0.3°, 24.7 ± 5.3%, *P* 0.003; , 10.6% 47.9%). 30.6 ± 6.9%, 11.6% 52.7%, 0.76 ± 0.13. A
Δ 1 Δ 2
(*P* 0.18, - *t*-).
E- k-

T I TPE C S , A , S

C S F .

28,29 (F . 5).
15.3 ± 1.0 ,


Contrast sensitivity
Normalized spatial frequency
100
10
1
0.1
1



± 30.7 (22.8% ± 5.8%, $P < 0.001$) E. 53.4% ± 5.1%, 20.0% 92.5% (F . 6 , 6). F 6 , (500) 600 . A 12 7 / (40.5 ± 8.3% . 36.9 ± 2.3%, P 0.75). B / (32.0 ± 7.1% . 7.1 ± 7.1%, P 0.034, - - t-). (*r* 0.085, P 0.73), (*r* 0.32, P 0.35, n 11). k -E (*r* 0.38, P 0.11), (*r* 0.59, P 0.056, n 11).

DISC SSION

E. k , E E E 23 , - , k , 2,3 , 19,20 E E ,

A [7,8] E [5,30] (F . 5), [5] ( ). (F . 6 6). k “ ” E

S MMAR

k E.

Ac n S d

F C G 331000459 (-) 1230030 (C), G 1E 04776 (A) 1E 01728 01E 020976 (D).

D : **J.- .** ; **L.-J. C** ; **S.A. K** ; **D.M. L** ; **C.** ,

R nc

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