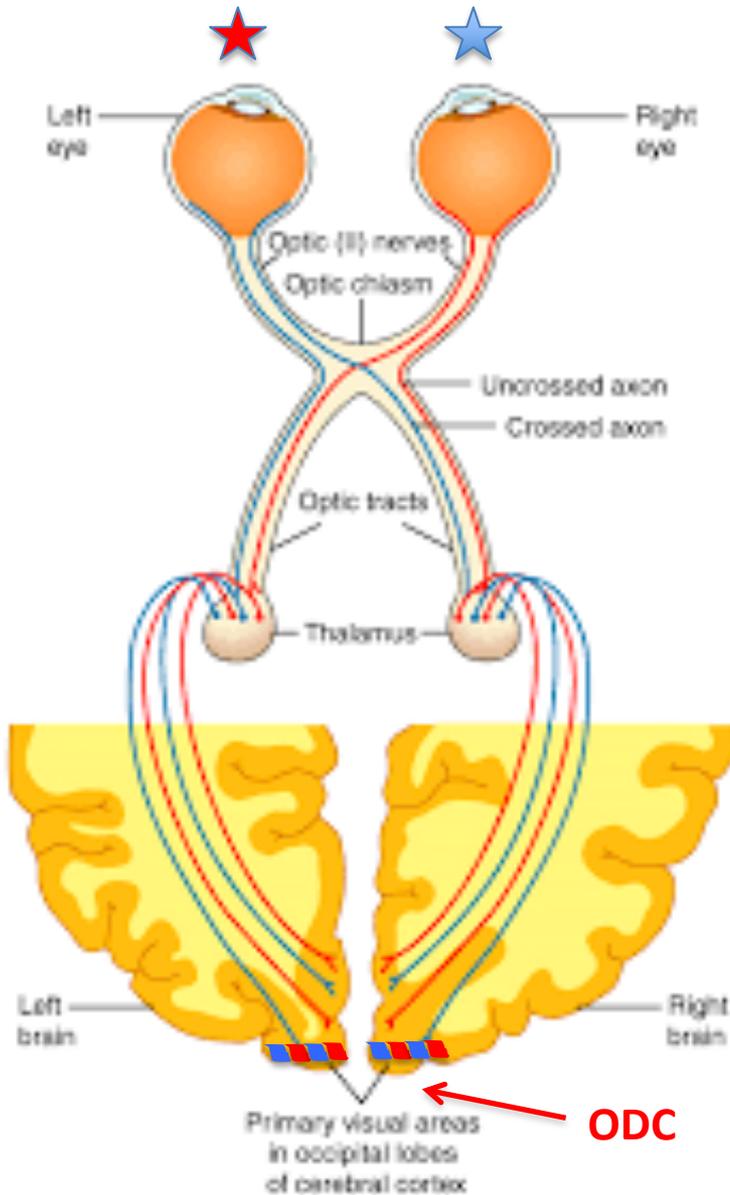


This manual describes Neutralization and Parity Challenge

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Normal

Normal: No Defect



Ocular Dominance Columns (ODC)

Normal: equal size columns



Amblyopia: Representative columns narrow



Ocular Dominance Columns (ODC) receive bilateral input from the eyes. In amblyopia the columns representing the amblyopic eye are reduced in size. Represented here as Red (left eye) and Blue (Right eye) are the ODC.

Please note the Red columns (left eye) and the Blue columns (right eye) are of equal dimensions.

Neutral Density Filters



Left Defect

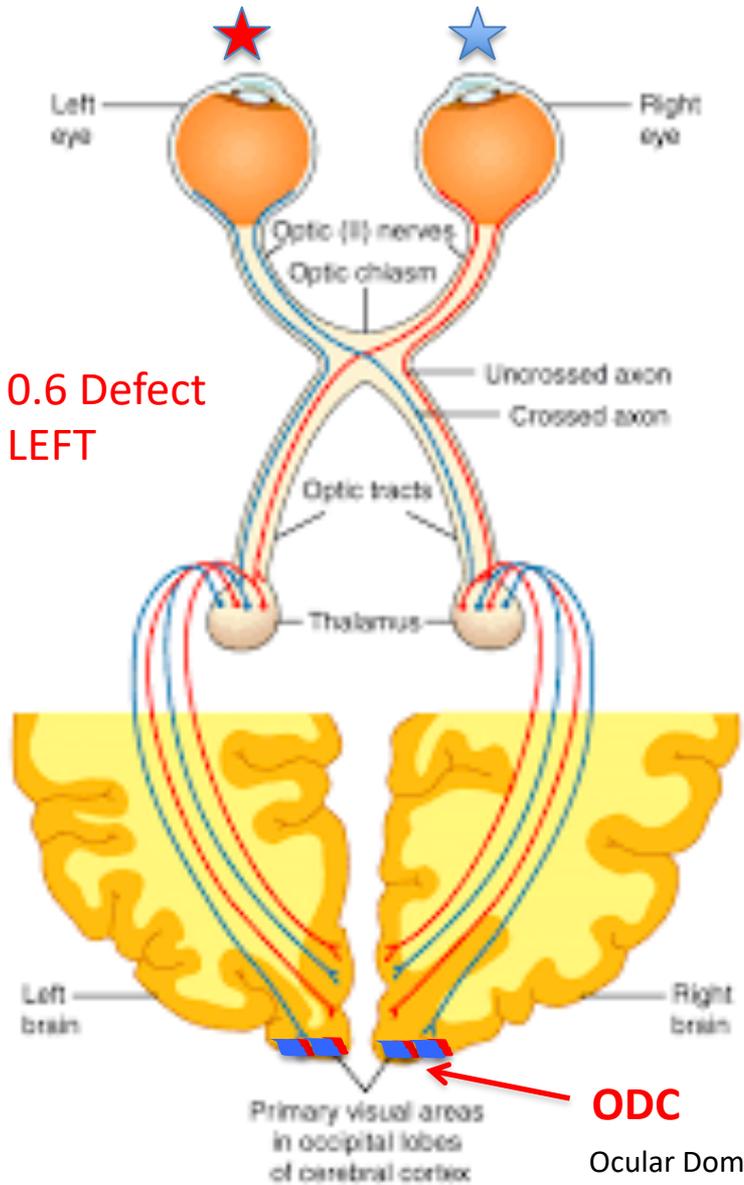
Amblyopia: 0.6 log units Defect

Neutralized = ?

In this example the left eye amblyopic defect is equivalent to 0.6 log units of light dimness.

In the Amblyometer® Test, for equally bright spaceships, the upper spaceship (left eye) would appear dimmer than the lower spacecraft (right eye).

Please note the Red columns (defective left eye) are narrower than the Blue columns (normal right eye).



0.6 Defect
LEFT

ODC
Ocular Dominance Columns (ODC)

Neutral Density Filters



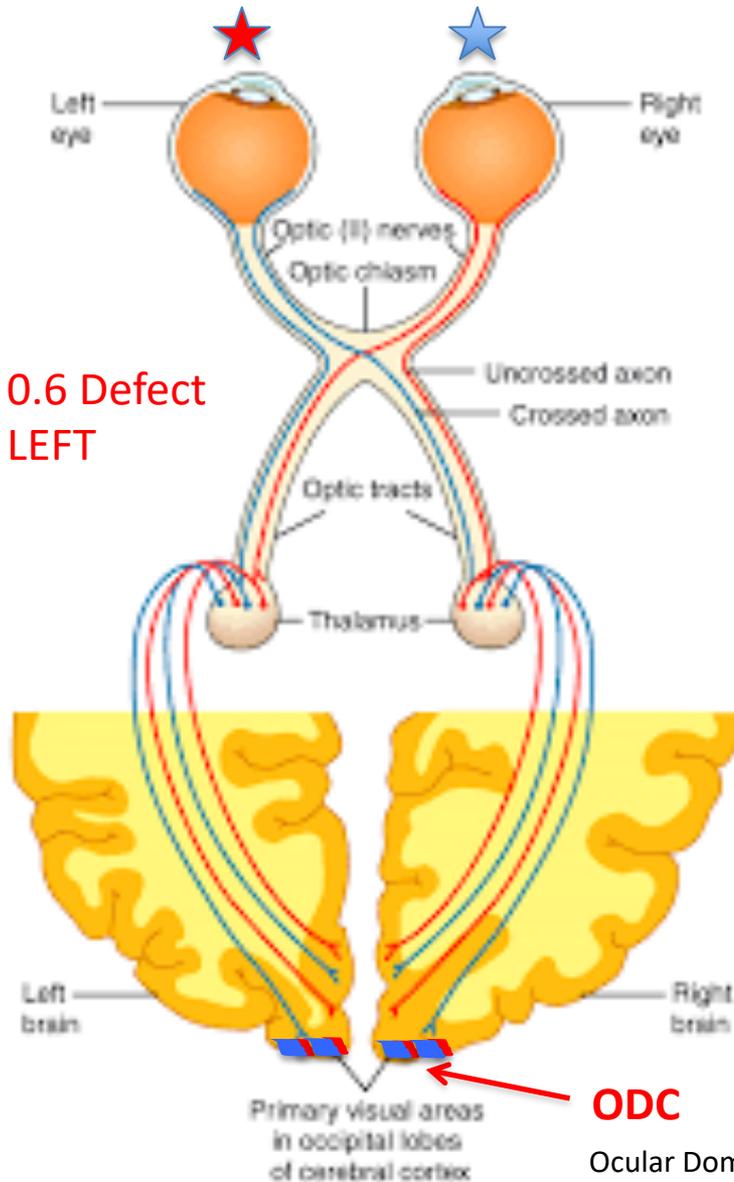
.6

Defect Balance

Neutralization

Amblyopia: 0.6 log units Defect

Neutralized = 0.6 log filter



A 0.6 log neutral density filter over the right eye neutralizes the 0.6 log unit defect of the left eye. In the Amblyometer® Test the upper and lower spaceships would appear equally bright after the right stimulus (bottom) is dimmed by a 0.6 log filter over the right eye.

Neutral Density Filters

.3

.9

1.2

1.5

Ocular Dominance Columns (ODC)

Challenge

.9

PARITY CHALLENGE DOUBLE THE SIZE OF A DEFECT.

1. Left Parity Challenge

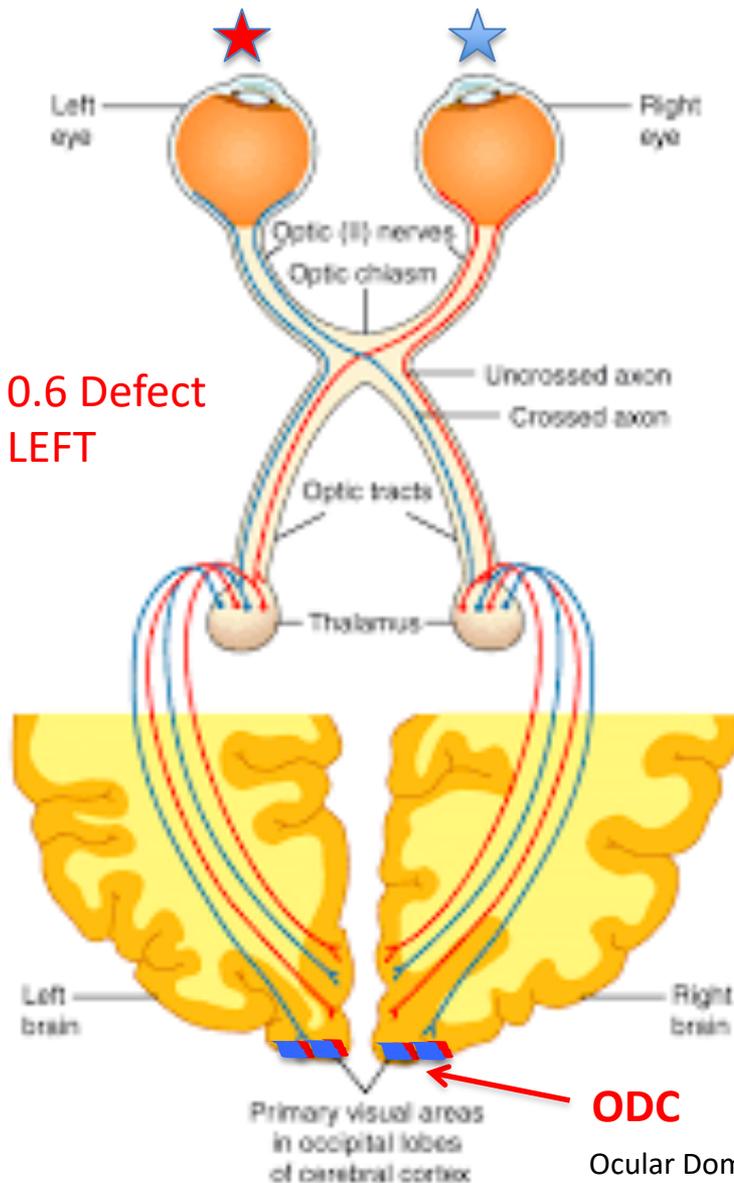
Amblyopia: 0.6 log units Defect

Left Parity Challenge with 0.9 log filter

Neutralization = ?

Parity challenge comes in two parts, (1) test with the 0.9 log filter over one eye and (2) repeat the test with the 0.9 log filter over the opposite eye.

The Parity flip-filter is used during testing. Here the denser filter is places over the left eye and the difference between the more and less dense filters is 0.9 log units.



ODC
Ocular Dominance Columns (ODC)

Neutral Density Filters

.3

.6

1.2

1.5

Challenge

.9

1.5

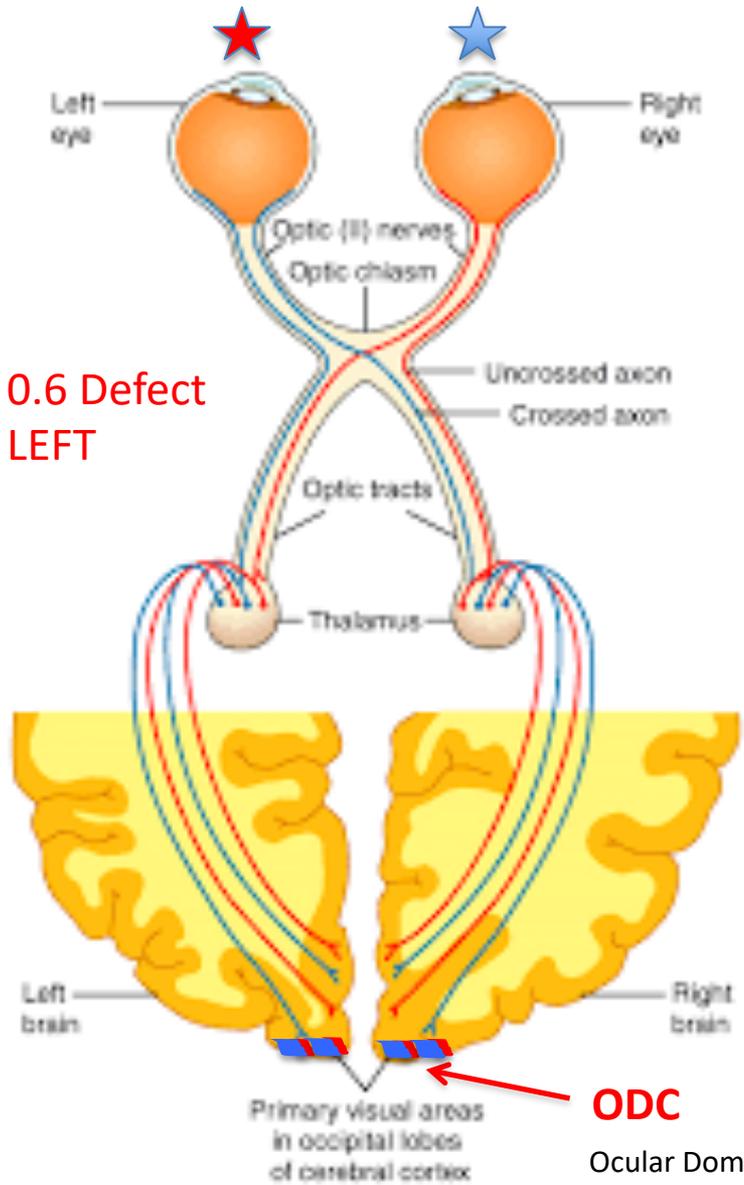
Parity

Left Parity Challenge

Amblyopia: 0.6 log units Defect

Left Parity Challenge with 0.9 log filter

Neutralization = 1.5 log filter



In order for the upper and lower spaceships to appear of equal brightness, a 1.5 log filter must be placed before the right eye to balance the 0.9 log challenge filter plus the 0.6 log defect of the left eye.

Neutral Density Filters

.3

.6

1.2

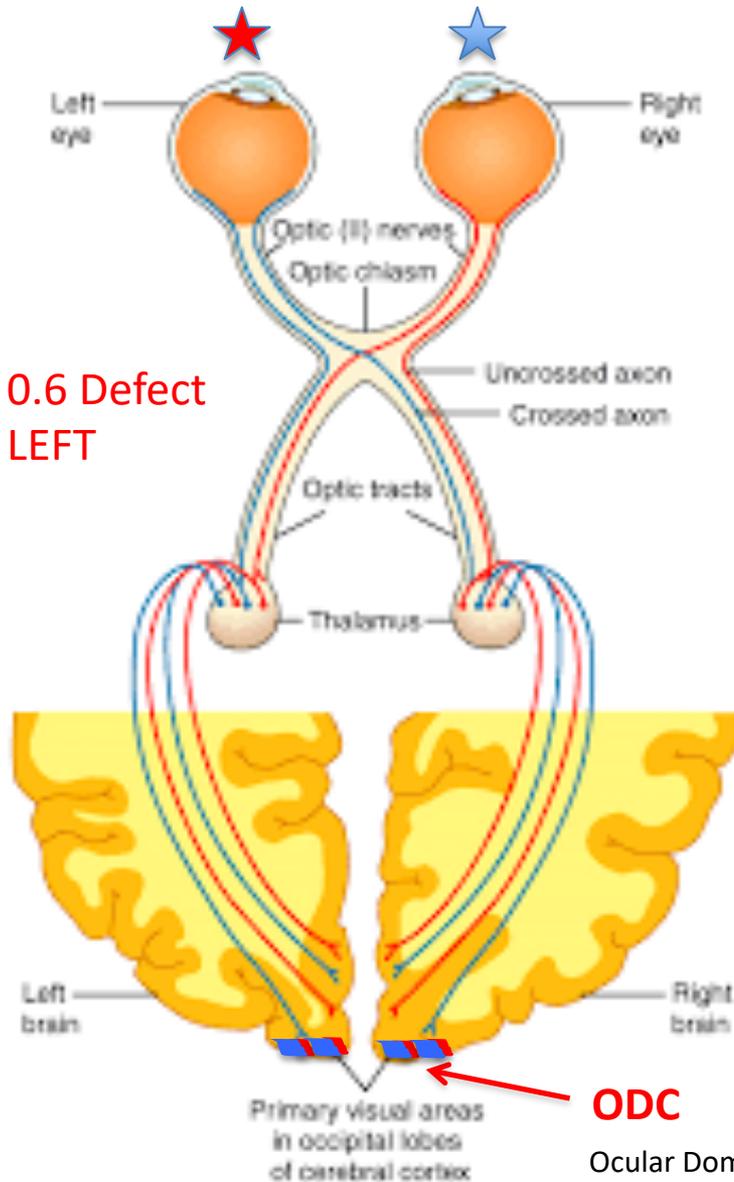
.9 Challenge

2. Right Parity Challenge

Amblyopia: 0.6 log units Defect

Right Parity Challenge with 0.9 log filter

Neutralization = ?



Here the right eye is challenged by the denser parity lens of the Parity flip filter.

Neutral Density Filters

.3

.6

1.2

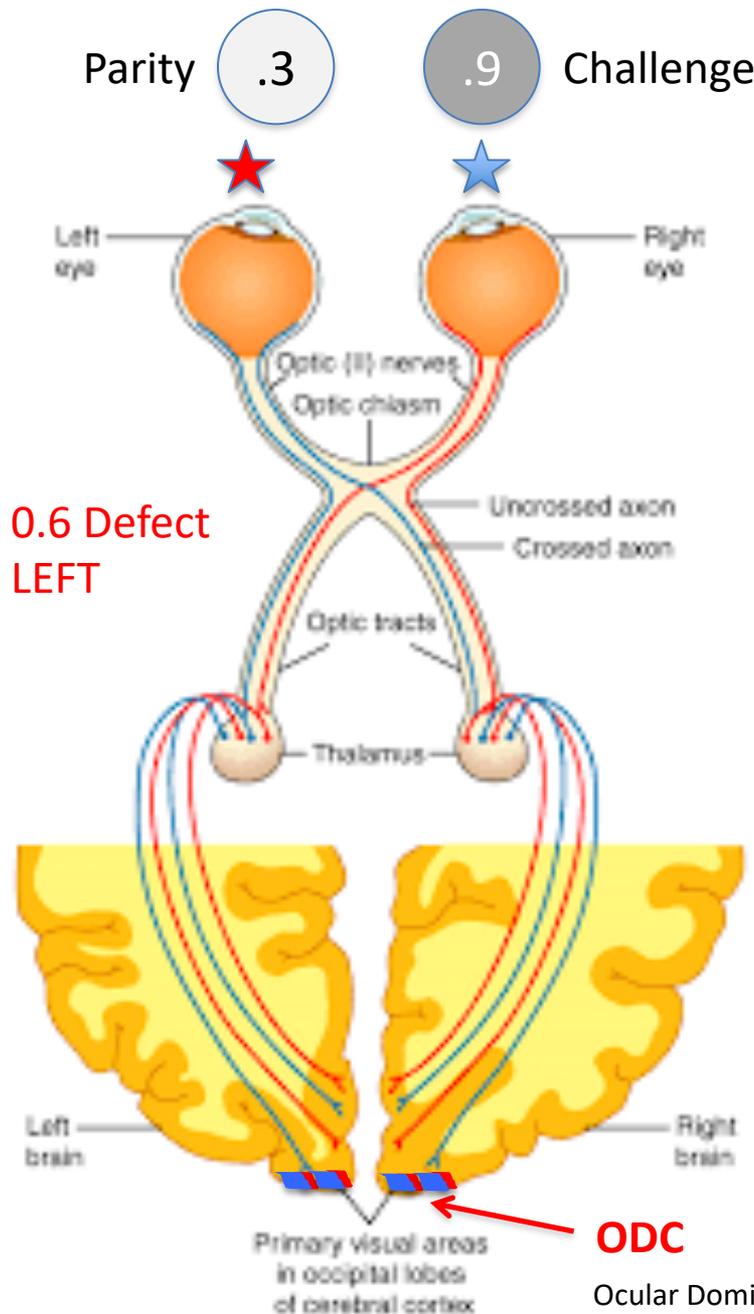
1.5

Right Parity Challenge

Amblyopia: 0.6 log units Defect

Left Parity Challenge with 0.9 log filter

Neutralization = 0.3 log filter



In order for the upper and lower spaceship to appear equal brightness a 0.3 log filter over the left eye is required, i.e., 0.6 defect + 0.3 Parity = 0.9 challenge.

Neutral Density Filters

.6

1.2

1.5

Result Parity Challenge

Parity Challenge Left = 1.5 units

Parity Challenge Right = 0.3 units

Difference = 1.2 ND

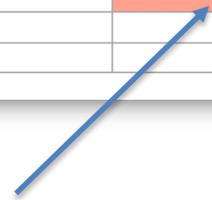
Amplified Left Defect = 1.2 ND

Doubles the 0.6 unit DEFECT

Endpoints of the example are entered into the automated calculator:
Result shows 0.6 defect OS

Table 1

Parity Challenge: <i>Right & Left</i>				Test Type	
NAME →	Example		Right	Age	
Date	4/25/20 8:27			GRADE	
Click the	OS	OD	Left	CLASS	y
<i>Drop-down menu</i>	1.5	0.3	2X	OD vs. OS.	1X
	1.5	0.3	Balance x 2	VAR	Balance x 1
	1.5	0.3	-1.2	0.36	-0.6
COUNT	3	0.6			
VAR	0	0	Neutralizing SCORE →		-0.6
Prefers OD	-0.6			OS Defect	Normal
Prefers OS				-0.6	OD Defect
No Preference					



Defect OS

Simply enter the 4 endpoint in dropdown menu and the result is calculated

Automated Calculator Numbers, Parity Challenge

Parity Challenge: <i>Right & Left</i>				Test Type	
NAME →	Jane Rosberg	Right			
Date	Enter Data				
Click the	0.0	OD	Left	CLASS	y
Drop-down menu	✓ 0.3	Enter Data	2X	OD vs. OS.	1X
	0.6	0.6	Balance x 2	VAR	Balance x 1
COUNT	0.9	0.6	0.15	0.005625	0.075
VAR	1.2	0	Neutralizing SCORE →		0.075
Prefers OD	1.5		OS Defect	Normal	OD Defect
Prefers OS	1.8			0.075	
No Preference	2.1				
	2.4				

Dropdown Menu

Selected Value

Result