Second Proofreading Corrections

1. FORMATTING

All the mathematical symbols throughout the text need to be written inside a Word equation, as for example , , and . In this way we can be consistent between formulas and symbols in the text.

**Authors affiliations**

2. CHANGE...

Indiana University-Purdue University Indianapolis

TO...

Indiana University - Purdue University Indianapolis

**Abstract**

3. CHANGE...

(visual field mean defect (MD) ≥ 10dB)

TO...

(visual field mean defect (MD) ≥ 10 dB)

4. CHANGE...

POAG, IOP > 21mmHg)

 TO...

(POAG, IOP > 21 mmHg)

5. CHANGE...

(NTG, IOP ≤ 21mmHg)

TO...

(NTG, IOP ≤ 21 mmHg)

6. CHANGE...

retinal tissue oxygen demand ()

TO...

retinal tissue oxygen demand ()

7. CHANGE...

 cylinder tissue width() can

 TO...

cylinder tissue width () can

8. CHANGE...

The model predicts that a decrease in

 TO...

 The model predicts that a decrease in

9. CHANGE...

flow autoregulation with no change in

 TO...

flow autoregulation with no change in

**1 Introduction**

10. CHANGE...

(visual field mean defect (MD) ≥ 10dB)

 TO...

(visual field mean defect (MD) ≥ 10 dB)

11. CHANGE...

mild glaucoma patients (MD ≤ 5dB)

TO...

mild glaucoma patients (MD ≤ 5 dB)

**2 Methods**

**2.1 Experimental data**

12. CHANGE...

by an untreated IOP >21 mmHg

TO...

by an untreated IOP > 21 mmHg

13. CHANGE...

measurements consistently ≤21 mmHg

TO...

measurements consistently ≤ 21 mmHg

**2.2 Mathematical model**

14. IN FIGURE 1 CAPTION CHANGE...

vein (CRV):Large arterioles/arteries

TO...

vein (CRV): large arterioles/arteries

15. IN TABLE 2, LEFT PART 5th LINE 1st COLUMN, CHANGE...

 TO...

16. IN TABLE 2, LEFT PART 6th LINE 1st COLUMN, CHANGE...

 TO...

17. FORMATTING

In Table 2, the left and the right part need to be divided by an empty column, with no line at the top and at the bottom

18. IN TABLE 3, 6th LINE 1st COLUMN, CHANGE...

 rate of ATP degradation,

 TO...

 rate of ATP degradation,

19. IN TABLE 3, LAST LINE 1st COLUMN, CHANGE...

 length constant for , ,

 TO...

 length constant for ,

20. CHANGE...

experimental in vivo relationship24(Table 4)

 TO...

experimental in vivo relationship24 (Table 4)

21. CHANGE...

is given by the nonlinear function f of the partial pressure

TO...

is given by the nonlinear function of the partial pressure

22. CHANGE...

effect of endothelium-1 released by endothelial

 TO...

effect of endothelin-1 released by endothelial

23. CHANGE...

through changes in the diameters in the LA and SA segments

TO...

through changes in the diameters of the LA and SA segments

24. CHANGE...

the change in oxygen flux must be equal the rate of oxygen

TO...

the change in oxygen flux must equal the rate of oxygen

25. IN FIGURE 2 CAPTION CHANGE...

 pressure of oxygen (x,r) in the tissue

 TO...

pressure of oxygen in the tissue

26. IN FIGURE 2 CAPTION CHANGE...

 TO...

27. IN FIGURE 2 CAPTION CHANGE...

 TO...

28. CHANGE...

 blood oxygen saturation and q is the tissue

TO...

 blood oxygen saturation and is the tissue

29. CHANGE...

 At each position x in the retinal vascular

 TO...

At each position in the retinal vascular

30. FORMATTING

The equations enumeration (2) should be not in italic.

31. CHANGE EQUATION (3) TO...

32. CHANGE...

where the subscript i indicates the vessel compartment

TO...

where the subscript indicates the vessel compartment

33. CHANGE...

TO...

34. CHANGE...

 small arterioles for

 TO...

 small arterioles for

35. CHANGE...

 TO...

36. CHANGE EQUATION (4) TO...

37. FORMATTING

The equations enumeration (4) should be not in italic and should be aligned with the right margin of the page.

**2.3 Model reference state**

38. CHANGE...

lumens is about 2.7%, in good agreement with 2.5% measured

TO...

lumens is about 2.7%, which is in good agreement with the proportion of 2.5% measured

39. FORMATTING

In Table 5 caption, Table 5. is written in italic, this is not consistent with the other captions.

40. IN TABLE 5 CAPTION, CHANGE...

(POAG, IOP>21 mmHg)

 TO...

(POAG, IOP > 21 mmHg)

41. IN TABLE 5 CAPTION, CHANGE...

(NTG, IOP≤21 mmHg)

TO...

(NTG, IOP ≤ 21 mmHg)

42. IN TABLE 5, 2nd COLUMN AND 7th ROW, CHANGE...

TO...

**2.4 Model Simulations**

43. FORMATTING

In the section 2.3 there enumerated list have an empty line only after, not before. This is not consistent with the previous sections.

44. FORMATTING

In the section 2.3 there are empty lines between the different paragraphs. This is not consistent with the previous sections.

45. CHANGE...

The model is used to theoretically estimate patient-specific values

TO...

The model is used to estimate patient-specific values

46. CHANGE...

and (Table 1(a)) given the clinical measurements

TO...

and (Table 1(a)) given the clinical measurements

47. CHANGE...

 input oxygen demand to (Table 1(a))

TO...

input oxygen demand to (Table 1(a))

48. CHANGE...

TO...

49. CHANGE...

reference state value

TO...

reference state value

50. FORMATTING

In Figure 3 caption, Fig 3. is not written in italic, this is not consistent with the other captions.

**3 Results**

**3.1 Experimental data**

51. CHANGE...

Olafsdottir and Van de walle et *al*.

TO...

Olafsdottir and Vandewalle et *al*.

52. FORMATTING

In Figure 4 caption, Fig 4. is not written in italic, this is not consistent with the other captions.

**3.2 Theoretical investigation**

53. CHANGE...

perfusion pressure ().The clinical data

TO...

perfusion pressure (). The clinical data

54. CHANGE...

Reference state values of IOP, MAP, arterial oxygen saturation,

TO...

Reference state values of IOP, MAP, arterial oxygen saturation,

55. CHANGE...

**A decrease in tissue width(d):**

TO...

**A decrease in tissue width (d):**

56. CHANGE...

or arteriole is decreased,higher levels

TO...

or arteriole is decreased, higher levels

57. CHANGE...

all other factors (MAP,IOP, d, arterial blood

TO...

all other factors (MAP, IOP, , arterial blood

58. CHANGE...

are impaired (i.e., absent)in the black dashed curve.

TO...

are impaired (i.e., absent) in the black dashed curve.

59. CHANGE...

decreasing tissue width from (blue curve)

TO...

decreasing tissue width from (blue curve)

**3.3 Theoretical interpretation of clinical data**

60. CHANGE...

oxygen demand(gray)

TO...

oxygen demand (gray)

61. CHANGE...

tissue width (blue)that will

TO...

tissue width (blue) that will

62. FORMATTING

In Figure 6 caption, Fig 6. is not written in italic, this is not consistent with the other captions.

63. CHANGE...

In Table 5, the values and are computed

TO...

In Table 5, the values and are computed

64. CHANGE...

(black curve)

 TO...

 (black curve)

**4 Discussion**

**4.3 Theoretical interpretation of clinical data**

65. CHANGE...

 given-patient-specific values

TO...

given patient-specific values

66. CHANGE...

on a wider set of glaucoma patients,are needed to

TO...

on a wider set of glaucoma patients, are needed to

**Acknowledgments**

67. CHANGE...

Merck Sharp and Dohme (no. B322201010013)(EV).

TO...

Merck Sharp and Dohme (no. B322201010013) (EV).