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A mathematical model of the atherosclerosis development in thin blood vessels and its asymptotic approximation

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Existing models of the atherosclerosis development will be discussed and a new improved model will be proposed. The existence and uniqueness of a positive solution of this new model is proved. Also this model will be analyzed with the help of asymptotic methods in thin domains. The corresponding limit problem is deduced and the asymptotic estimate for the difference between the solution of the initial problem and solution of the limit problem is proved.