On Epidemic Risk Group Dynamics

MODEL CHECKS

Jesse Knight[1], Linwei Wang[1], Huiting Ma[1], Katherine Young[2], Harry Hausler[2], Sheree Schwartz[3], Stefan Baral[3], and Sharmistha Mishra[1]

[1]MAP Centre for Urban Health Solutions, Unity Health Toronto
[2]TB HIV Care, South Africa
[3]Dept. Epidemiology, Johns Hopkins Bloomberg School of Public Health
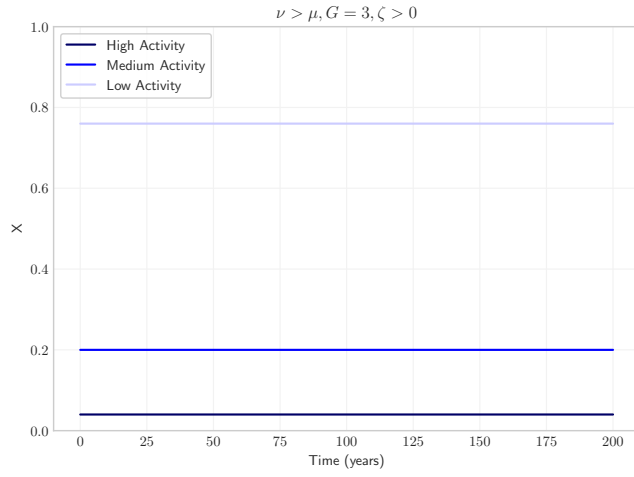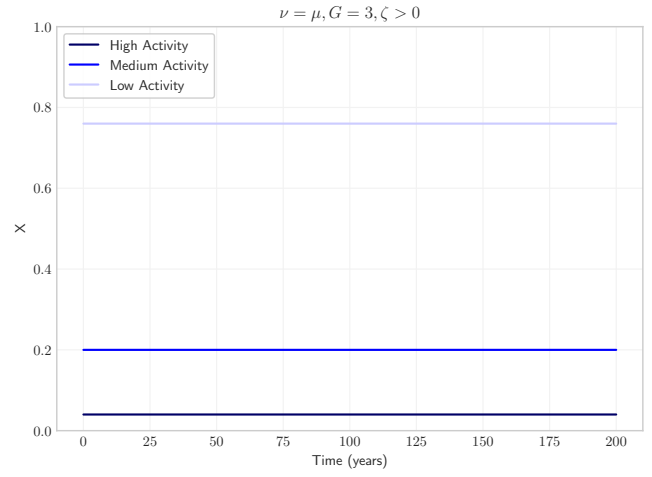
April 23, 2019

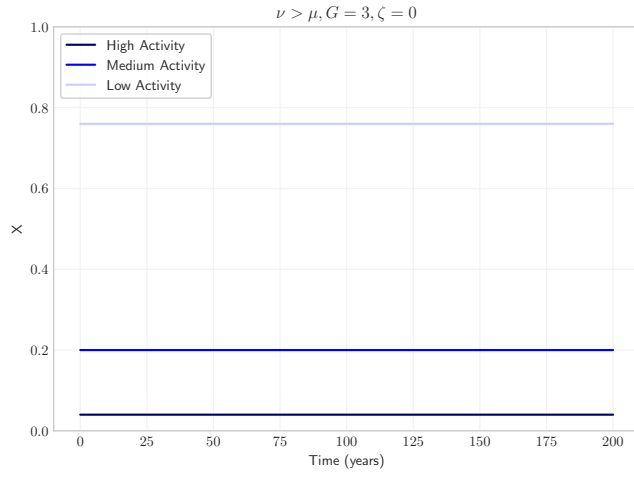## Contents

1 Model Variants

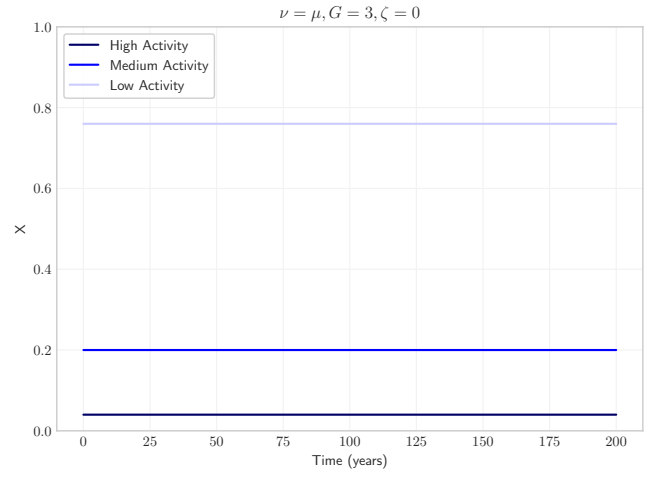## 1.1 Group Dynamics

1.1.1 Risk Groups
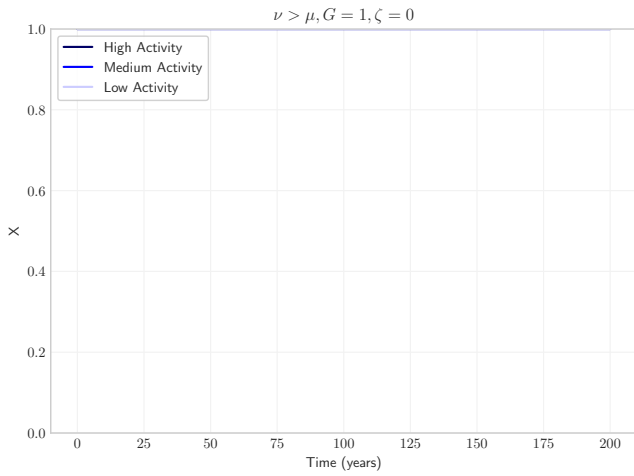

(a) $\nu = 0.05; G = 3; \zeta = 1$
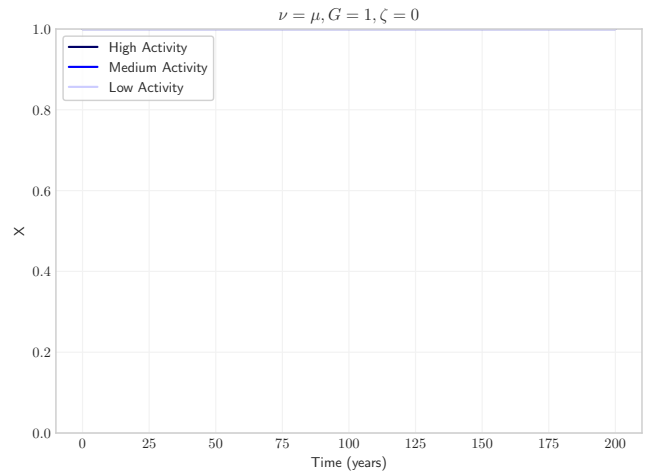
(b) $\nu = 0.03; G = 3; \zeta = 1$

(c) $\nu = 0.05; G = 3; \zeta = 0$

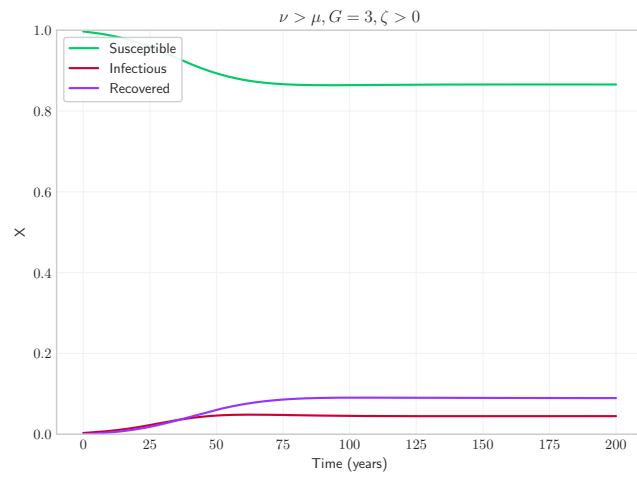(d) $\nu = 0.03; G = 3; \zeta = 0$
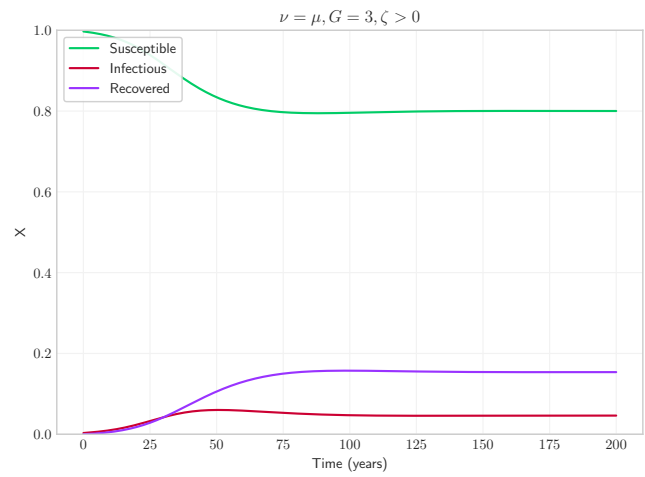
(e) $\nu = 0.05; G = 1; \zeta = 0$

(f) $\nu = 0.03; G = 1; \zeta = 0$
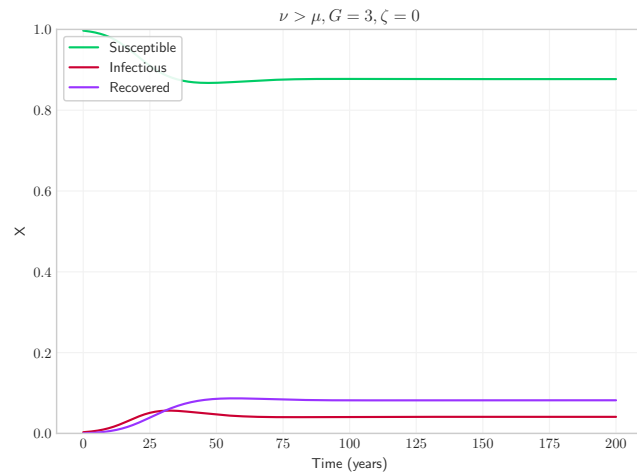
Figure 1.1.1: Risk Group Size
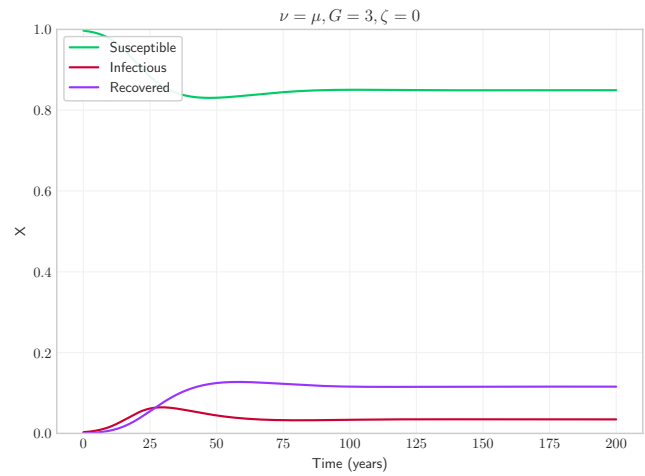
1.1.2 Health Groups
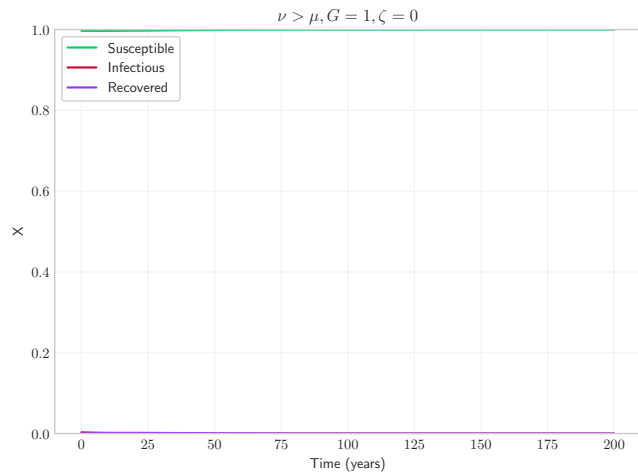

(a) $\nu = 0.05; G = 3; \zeta = 1$
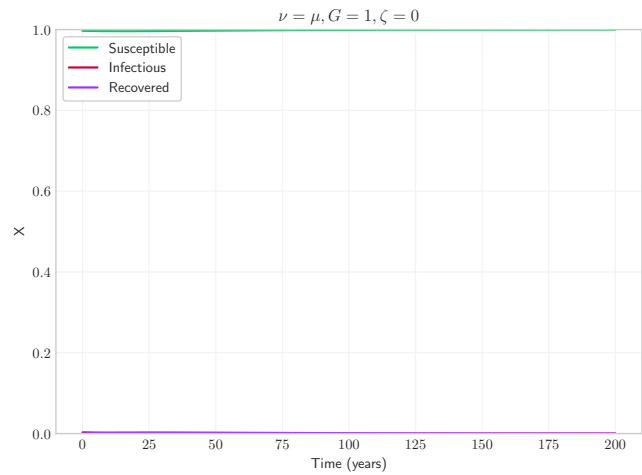
(b) $\nu = 0.03; G = 3; \zeta = 1$

(c) $\nu = 0.05; G = 3; \zeta = 0$

(d) $\nu = 0.03; G = 3; \zeta = 0$

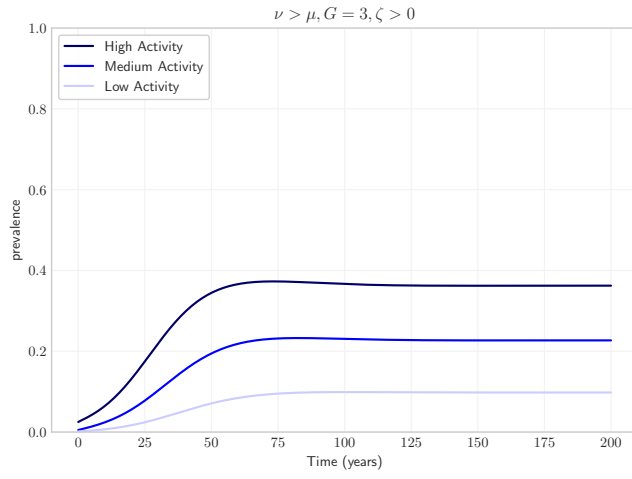(e) $\nu = 0.05; G = 1; \zeta = 0$
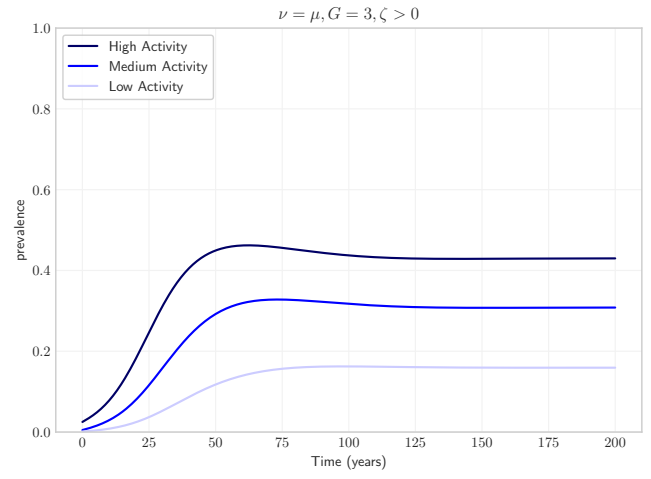
(f) $\nu = 0.03; G = 1; \zeta = 0$

Figure 1.1.2: Health Group Size
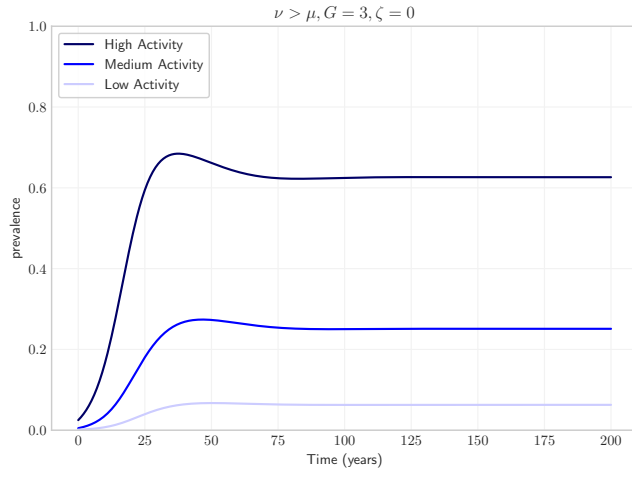
1.2 Epidemic Features
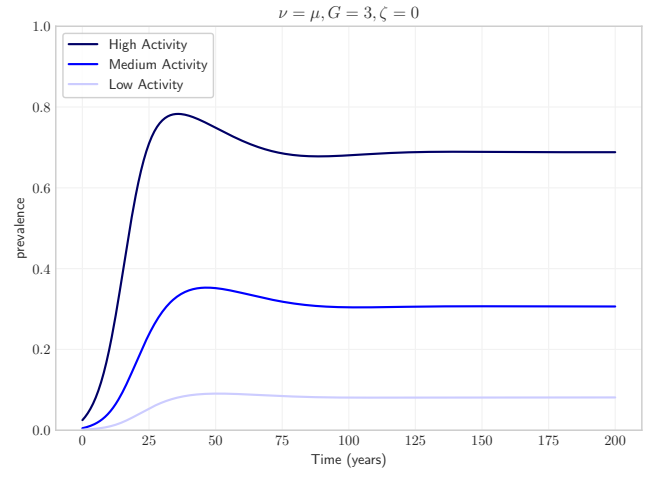
1.2.1 Prevalence

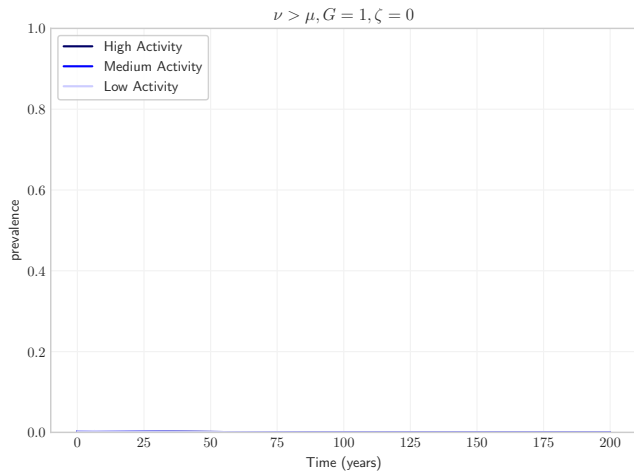(a) $\nu = 0.05; G = 3; \zeta = 1$
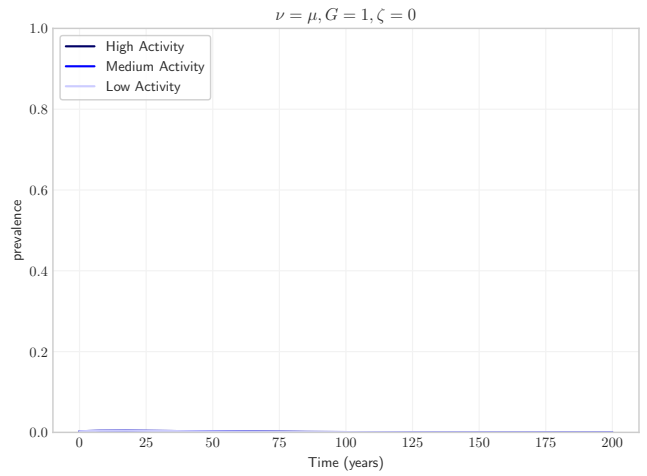
(b) $\nu = 0.03; G = 3; \zeta = 1$

(c) $\nu = 0.05; G = 3; \zeta = 0$

(d) $\nu = 0.03; G = 3; \zeta = 0$

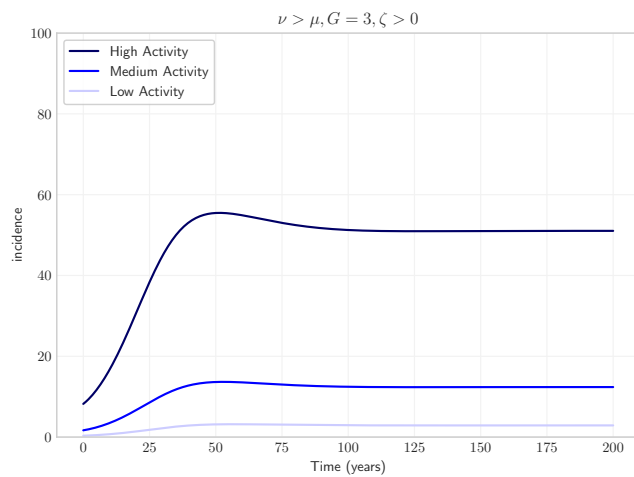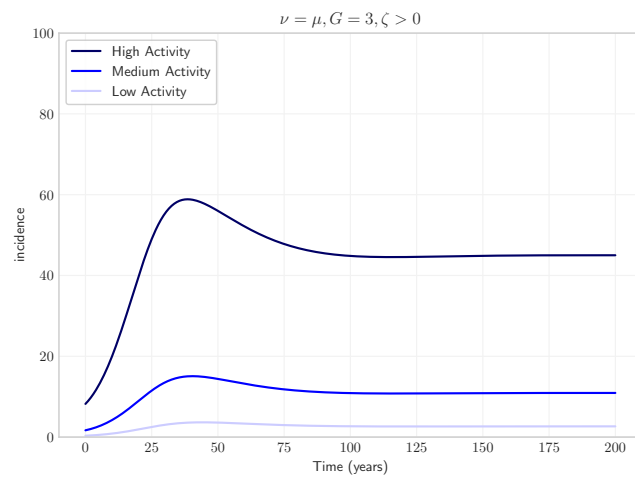(e) $\nu = 0.05; G = 1; \zeta = 0$

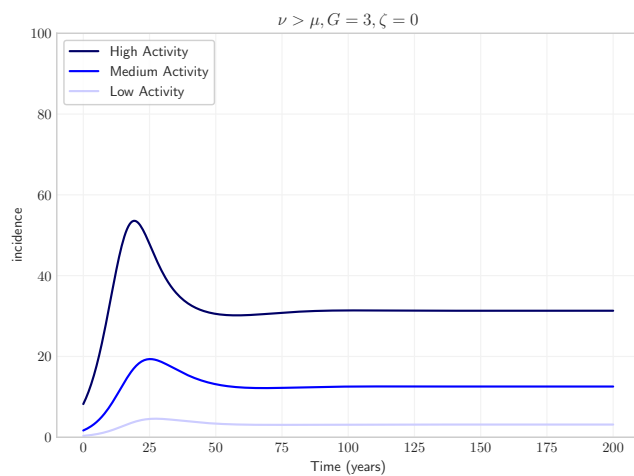(f) $\nu = 0.03; G = 1; \zeta = 0$

Figure 1.2.1: Prevalence
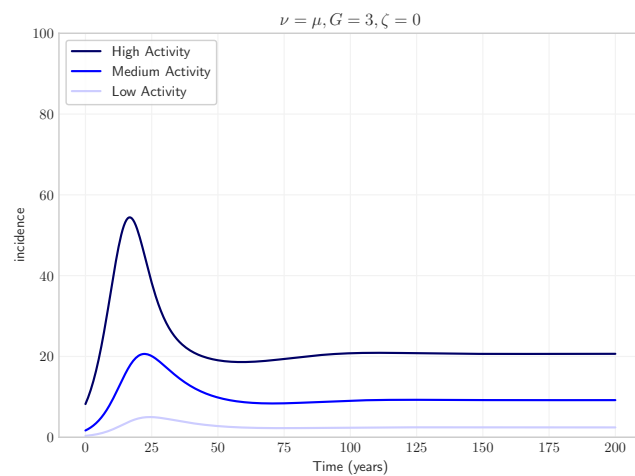
1.2.2 Incidence

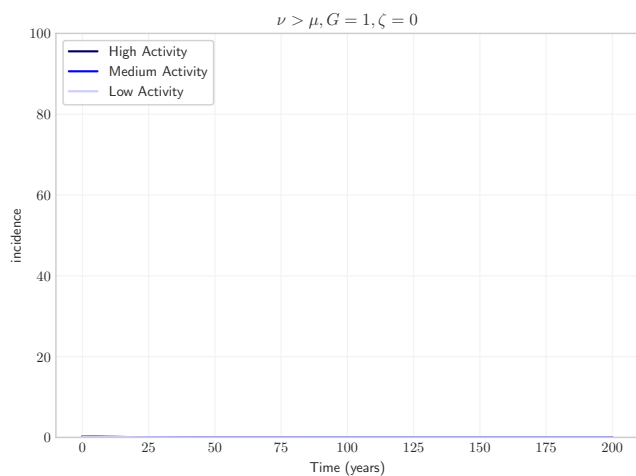

(a) $\nu = 0.05; G = 3; \zeta = 1$
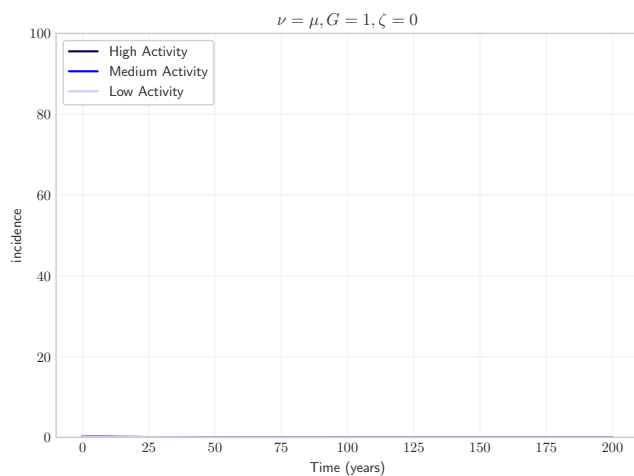
(b) $\nu = 0.03; G = 3; \zeta = 1$

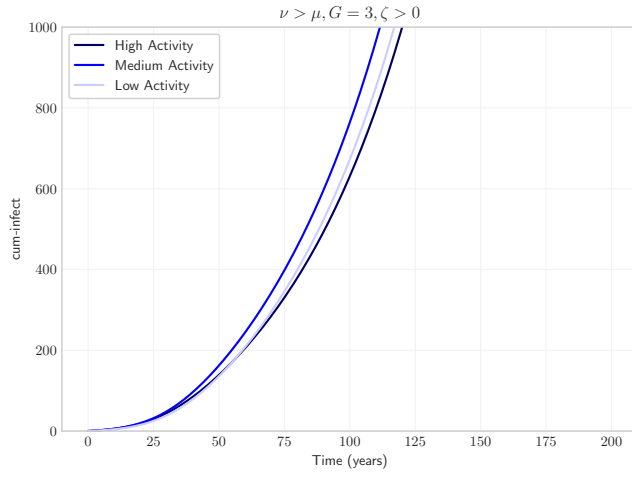(c) $\nu = 0.05; G = 3; \zeta = 0$

(d) $\nu = 0.03; G = 3; \zeta = 0$

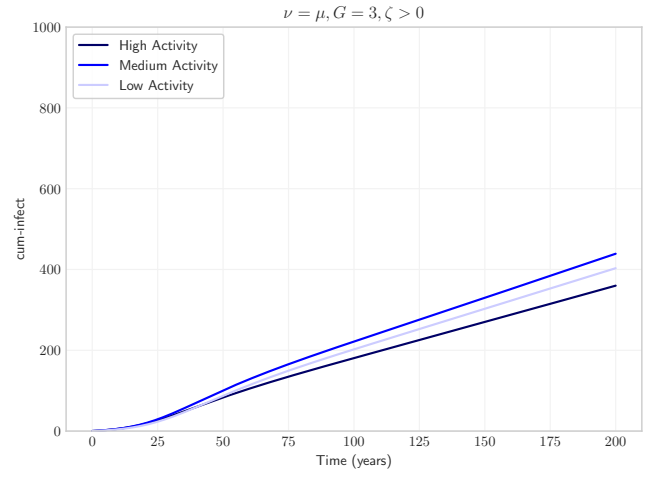(e) $\nu = 0.05; G = 1; \zeta = 0$

(f) $\nu = 0.03; G = 1; \zeta = 0$
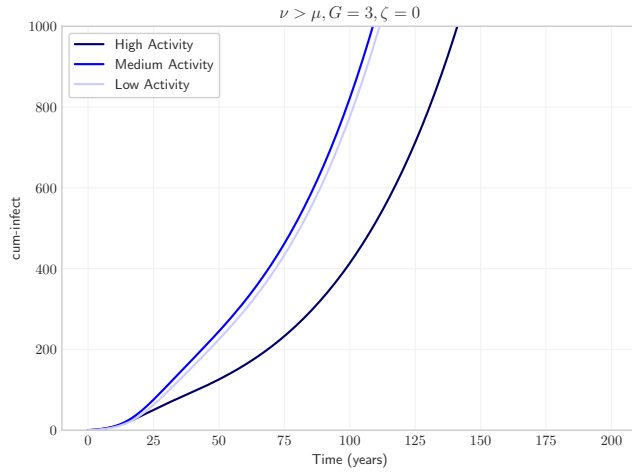
Figure 1.2.2: Incidence (per 1000)
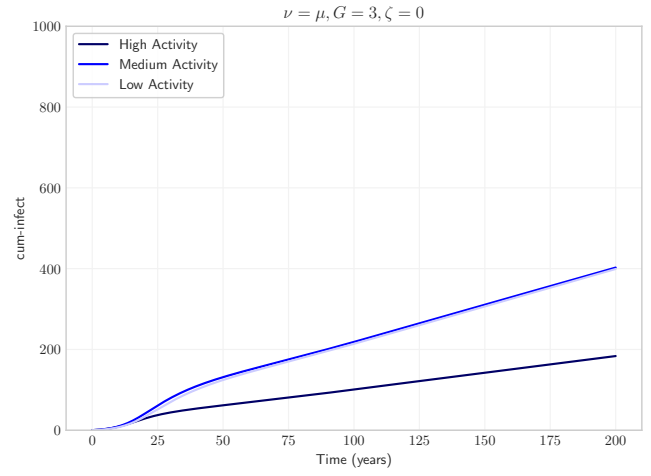
1.2.3 Cumulative Infections
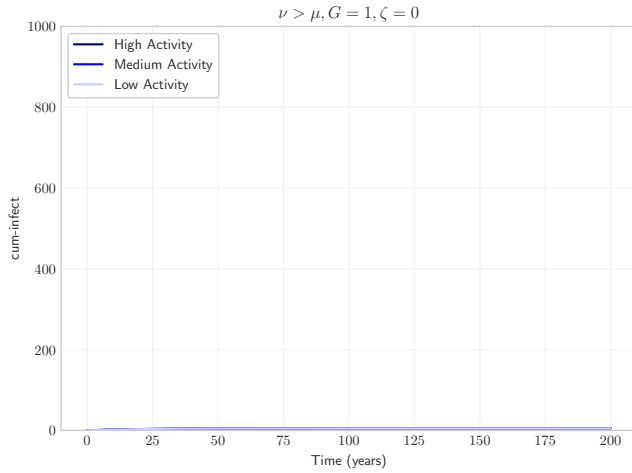

(a) $\nu = 0.05; G = 3; \zeta = 1$

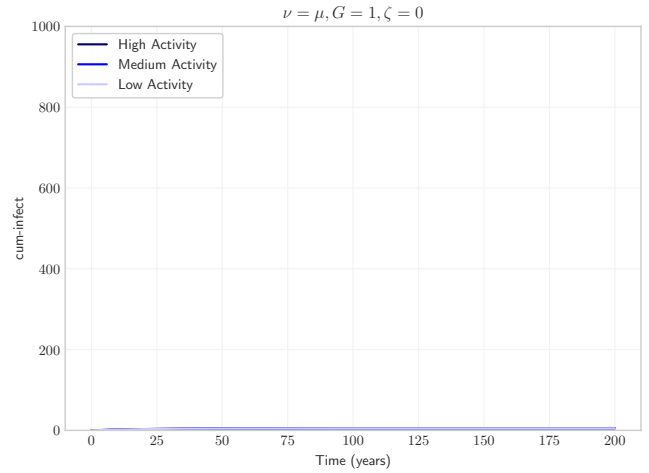(b) $\nu = 0.03; G = 3; \zeta = 1$

(c) $\nu = 0.05; G = 3; \zeta = 0$

(d) $\nu = 0.03; G = 3; \zeta = 0$

(e) $\nu = 0.05; G = 1; \zeta = 0$

(f) $\nu = 0.03; G = 1; \zeta = 0$

Figure 1.2.3: Cumulative Infections