



Define the model

```
model = @model begin
  @param begin
    tvcl ∈ RealDomain(lower=0, init = 4.0)
    tvv ∈ RealDomain(lower=0, init = 70)
    pmoncl ∈ RealDomain(lower = -0.99, init= -0.7)
    Ω ∈ PDiagDomain(init=[0.09,0.09])
    σ_prop ∈ RealDomain(lower=0,init=0.04)
  end

  @random begin
    η ~ MvNormal(Ω)
  end

  @pre begin
    CL = tvcl * (1 + pmoncl*isPM) * (wt/70)^0.75 * exp(η[1])
    V = tvv * (wt/70) * exp(η[2])
  end
  @covariates wt isPM

  @dynamics ImmediateAbsorptionModel
  #@dynamics begin
  #   Central' = - (CL/V)*Central
  #end

  @derived begin
    cp = @. 1000*(Central / V)
    dv ~ @. Normal(cp, sqrt(cp^2*σ_prop))
  end
end
```