

# EFFECT OF TRANSPORT AND CRYOPRESERVATION ON THE ARCHITECTURE AND VIABILITY OF IMMATURE TESTICULAR TISSUE OBTAINED FROM PREPUBERTAL GORILLAS (*Gorilla gorilla gorilla*)

Bruna Oliveras i Seguí  
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## INTRODUCTION

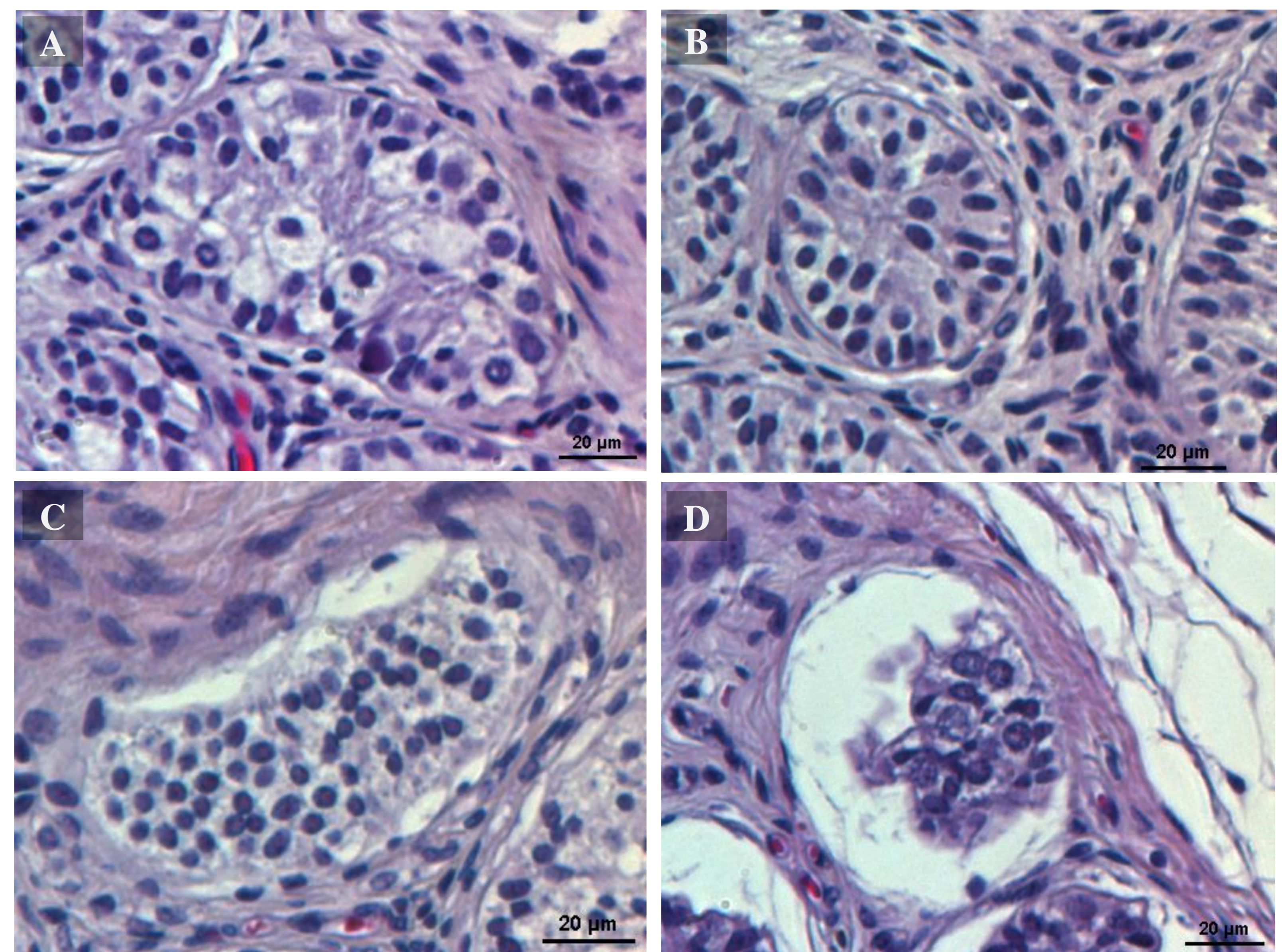
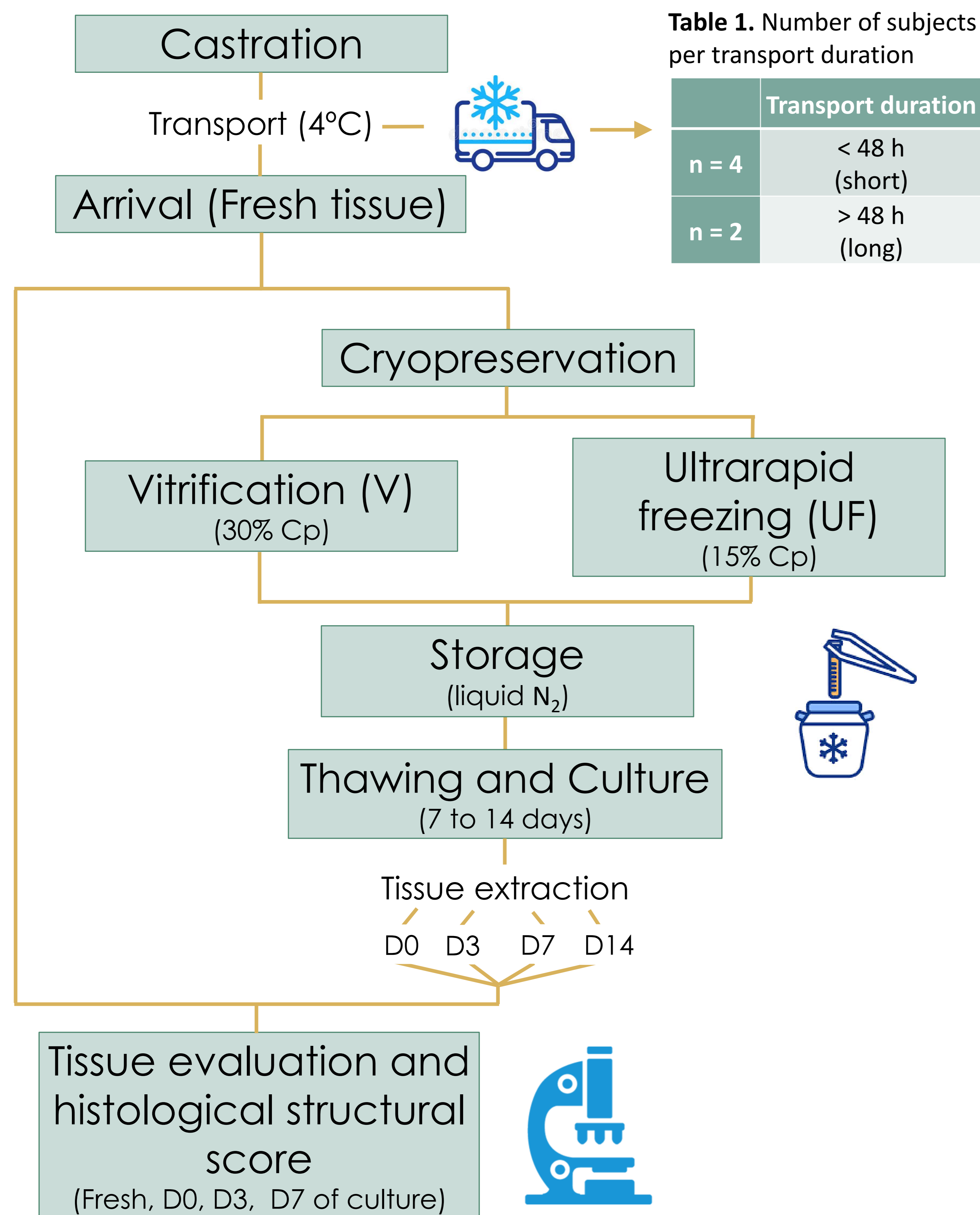
The rapid extinction rate requires new conservation strategies, such as genetic material cryopreservation. Prepubertal animals only have immature testicular tissue available to preserve their reproductive potential. Although experimental protocols are already being used in humans, no protocols are reported in gorillas.

## OBJECTIVES

This study aimed to analyse:

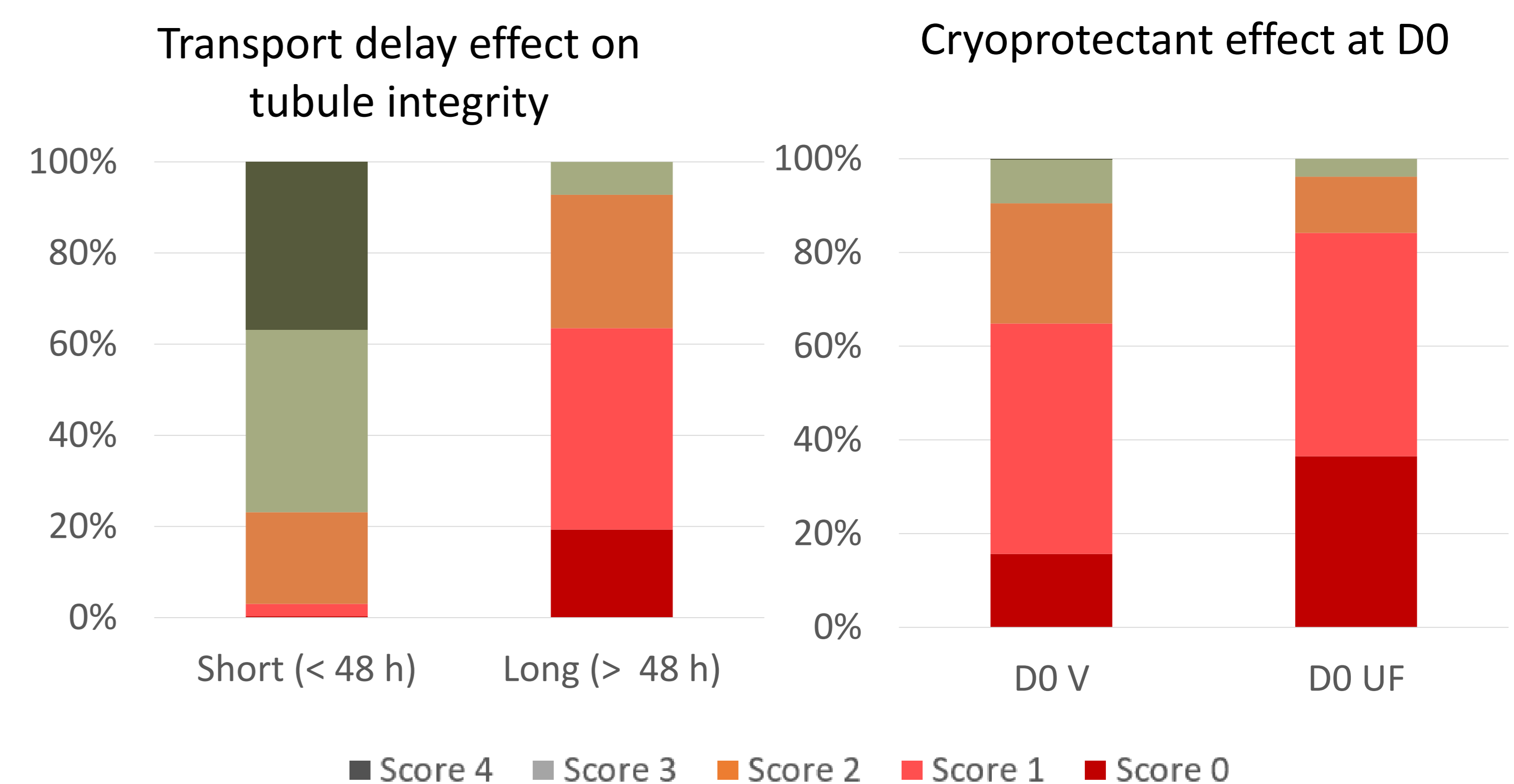
- Two solutions of cryoprotectants (Cp) for the cryopreservation of immature testicular tissue of *Gorilla gorilla gorilla*.
- Proliferation and maturation of testicular tissue
- Effect of transport over tissue integrity

## MATERIALS AND METHODS



**Figure 1:** The four images illustrate an example for each one of the histological structure scores (from 4 to 1). **A.** Score 4: the cells are attached to the basement membrane, we can clearly identify and distinguish both types of intratubular cells, there is cell cohesion, and less than 5% of pyknotic cells. **B.** Score 3: the tubule meets all parameters except intratubular cell distinction. **C.** Score 2: same parameters as the score 3 tubule but without adhesion to the basement membrane. **D.** Score 1: The only parameter met is the distinction between intratubular cells.

## RESULTS

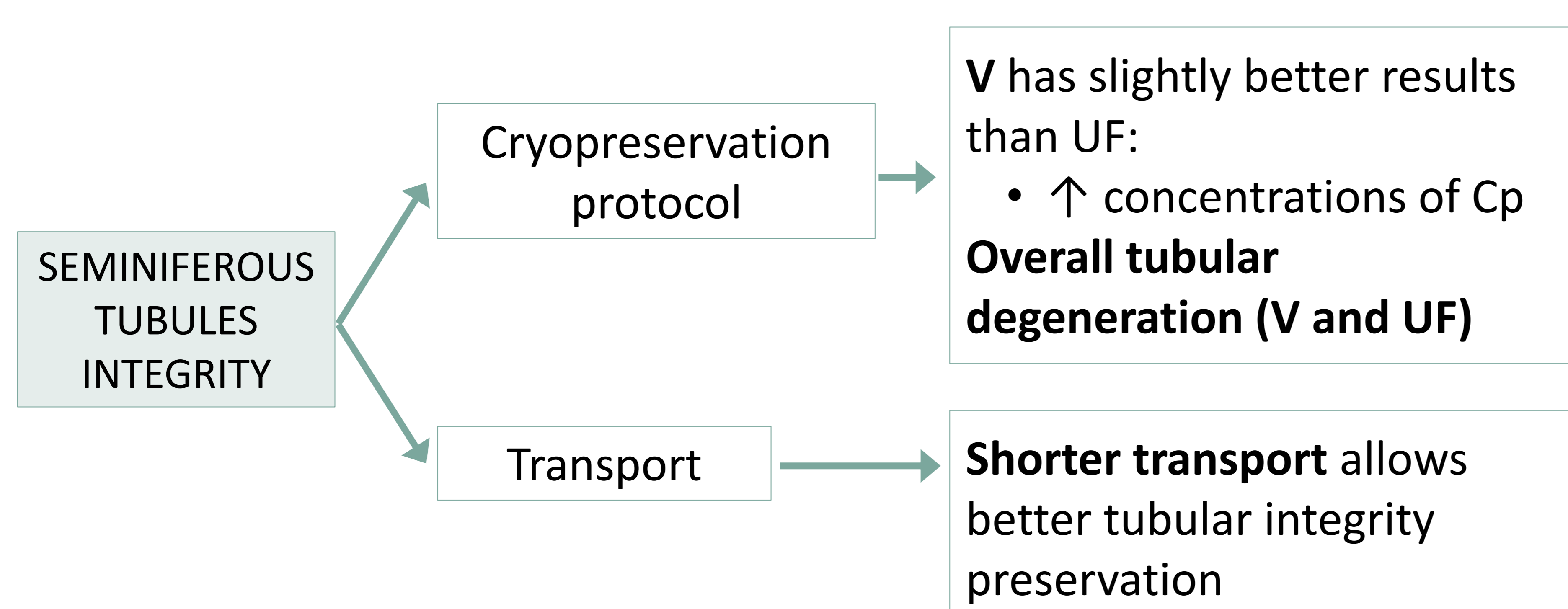


**Figure 2:** Representation of the effect of time delay on tubular integrity. Long transports had a more prominent loss of tubular integrity. Only 9% of tubules had a good score (3 or 4).

Short transports had over 75% of tubules with a well preserved integrity

**Figure 3:** Representation of the effect of the cryopreservation protocol on tubular integrity. The vitrification procedure was slightly better than UF at maintaining tubular integrity.

## DISCUSSION AND CONCLUSIONS



### Loss of tissue integrity after cryopreservation and long transport:

- Adjust cryopreservation protocol**
  - ✓ Longer incubation with Cp
  - ✓ Adjust Cp concentration
- Improve transport conditions**
  - ✓ Shorter transport
  - ✓ Temperature control