# Impact of cells on fibrinolysis: Neutrophils as key modulators of fibrin structure and lysis in thrombi

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The therapeutic modality of thrombolysis relies on administration of substances capable of converting plasminogen to plasmin, which in turn digests the primary fibrin scaffold holding the thrombus together. Since this approach is often ineffective, and is associated with bleeding complications, a need for the exploration of factors influencing the effectiveness of thrombolysis is emerging. Thrombi may contain considerable amounts of neutrophil granulocytes, which are capable of neutrophil extracellular trap (NET) formation by catapulting their DNA with associated histones and granular enzymes to the extracellular space as a response to thrombosis-associated inflammatory signals. Since, according to recent studies, NETs are mandatory components of arterial and venous thrombi, assessment of their thrombolytic consequences is crucial. Our previous studies have shown that DNA and histones, the major components of NETs alter the structure of clots rendering them more resistant to fibrinolysis, and recently we have confirmed these effects using neutrophil-derived NETs in plasma clots. Mounting data from our and others' studies suggest that the currently used fibrin-targeted thrombolytic protocols might be augmented by the addition of enzymes capable of NET degradation (such as DNAses), which could open a new area of designing thrombolytic agents of the near future.