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Duration of antigen exposure and B-cell fate

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B-cell's exposure to antigen in the absence of T-cell help should lead to tolerance according to Matzinger's postulates. This view is supported by multiple *in vivo* studies of B-cells that are continuously exposed to self-antigens. However, whether transient exposure to antigens may be sufficient for B-cell death or tolerance *in vivo* is unclear. In addition, whether transient acquisition of antigen can trigger productive B-cell response when T-cell help is available is not known. Our recent studies suggest that in the presence of T-cell help, single transient antigen acquisition is sufficient to get B-cells into the germinal centers and to induce memory and plasma cell responses. At the same time, B-cells transiently exposed to monovalent or moderately multivalent antigens do not undergo apoptosis or become anergic *in vivo* in the absence of T-cell help. After a brief period of activation these B-cells return to quiescence and can be efficiently recruited into B-cell responses upon reacquisition of antigen and T-cell help. Overall, these studies suggest that duration of B-cell exposure to foreign antigens or self-antigens may be one of the major factors determining their fate *in vivo*.

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